AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF	PAGES
	1		3

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
0001	16 July 2003		

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
US ARMY ENGINEER DISTRICT, FORT WORTH ATTN: CESWF-CT (RM 2A19) PO BOX 17300 FORT WORTH, TX 76102-0300			

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*	(X)	9A. AMENDMENT OF SOLICIATION NO.
	☒	DACW63-03-B-0002
		9B. DATED *(SEE ITEM 11)* 1 JULY 2002
	☐	10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED *(SEE ITEM 11)*
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a)By completing items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (*Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

The Solicitation for REPAIR AND PAINT TAINTER GATES, TOWN BLUFF DAM, WOODVILLE, TEXAS, is amended as follows:

See Continuation Sheet.

NOTE: Bid Opening date and time remain 31 July 2003 at 2 pm, as previously announced.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
15B. CONTRACTOR/OFFEROR *(Signature of person authorized to sign)*	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA *(Signature of Contracting Officer)*	16C. DATE SIGNED

Item 14. Continued.

CHANGES TO THE BIDDING SCHEDULE

1. Replace the Bidding Schedule with the attached new Bidding Schedule, bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACW63-03-B-0002."

Note: Changes occur on pages 13 and 14.

CHANGES TO THE CONTRACT CLAUSES

2. Delete the following clauses from Section 00700:

Clause 252.219-7011 NOTIFICATION TO DELAY PERFORMANCE (JUN 1998)
Clause 252.232-7003 ELECTRONIC SUBMISSON OF PAYMENT REQUESTS (MAR 2003)

CHANGES TO THE SPECIFICATIONS

3. Replace the Project Sign Layout and Project Sign Details attached to the end of Section 01580 with the Project Sign Layout and Project Sign Details attached to this amendment.

4. Replacement Sections - Replace the following sections with the accompanying new sections of the same number and title, bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACW63-03-B-0002:"

SECTION 01770F	CONTRACT CLOSEOUT
SECTION 02141	CARE OF WATER DURING CONSTRUCTION
SECTION 05092	NONDESTRUCTIVE EXAMINATION OF EXISTING WELDS
SECTION 05120	REPAIR OF TAINTER GATE MEMBERS
SECTION 05150	REMOVAL, DISPOSAL AND REPLACEMENT OF WIRE ROPE FOR OVERHEAD CRANE
SECTION 05501	SIDE SEAL ASSEMBLY FABRICATION
SECTION 09965A	PAINTING: HYDRAULIC STRUCTURES

CHANGES TO PHOTOS

5. The following listed attached new photos shall be added to the specifications:

PLATE Amend 0001-1
PLATE Amend 0001-2
PLATE Amend 0001-3
PLATE Amend 0001-4
PLATE Amend 0001-5

CHANGES TO THE DRAWINGS

6. Replacement Drawings.- Replace the drawings listed below with the attached new drawings of the same number, bearing the notation "AM #0001":

S01.cal 4	S1	SCOPE OF WORK
S02.cal 5	S2	REPAIRS - ALL SIX GATES
S03.cal 6	S3	REPAIRS - GATE 1
S09.cal 12	S9	NON-DESTRUCTIVE EXAMINATION DETAILS

S10.cal 13 S10 REPAIR DETAILS I
S12.cal 15 S12 SERVICE CRANE WORK
R02.cal 21 R2   TYPICAL GATE BAY

END OF AMENDMENT

BIDDING SCHEDULE (cont)

Item No.	Description	Estimated Quantity	Unit	Unit Cost	Estimated Amount
NOTE: See Bid Schedule Note No. 11 Description of Bid Items for work to be included in Bid Items.					
BASE BID: All work required by the plans and specifications for the construction of the Repair and Paint Tainter Gates excluding all Options.					
0001	**Structural Repair and Paint Gate #1:**	Job	Sum	***	$_____
0001AA	Repair Pits on Skin Plate on Gate #1, complete	1500	Ea	$_____	$_____
0002	**Structural Repair and Paint Gate #2:**	Job	Sum	***	$_____
0002AA	Repair Pits on Skin Plate on Gate #2, complete	1500	Ea	$_____	$_____
0003	**Structural Repair and Paint Gate #3:**	Job	Sum	***	$_____
0003AA	Repair Pits on Skin Plate on Gate #3, complete	1500	Ea	$_____	$_____
0004	**Structural Repair and Paint Gate #4:**	Job	Sum	***	$_____
0004AA	Repair Pits on Skin Plate on Gate #4, complete	1500	Ea	$_____	$_____
0005	**Structural Repair and Paint Gate #5:**	Job	Sum	***	$_____
0005AA	Repair Pits on Skin Plate on Gate #5, complete	1500	Ea	$_____	$_____
0006	**Structural Repair and Paint Gate #6:**	Job	Sum	***	$_____
0006AA	Repair Pits on Skin Plate on Gate #6, complete	1500	Ea	$_____	$_____
0007	Repair and Paint Bulkheads	Job	Sum	***	$_____
0008	Fabricate & paint one new pick-up beam	Job	Sum	***	$_____
0009	Mobilization & Demobilization	Job	Sum	***	$_____
0010	Final Record Drawings	Job	Sum	***	$ 7,500.00
0011	Warranty Work (All Contract Work)				
	The monetary value of this bid item shall equal at least 1 per cent of the total of all bid items preceding it. A value less than 1 per cent will result in a determination of non-responsive bid. See Contract Specification Section 01770 CONTRACT CLOSEOUT, paragraph “Contractor’s Response to Construction Warranty Service Requirements.”				
		Job	Sum	***	$_____
	TOTAL BASE BID				**$**_____

BIDDING SCHEDULE (cont)

Item No.	Description	Estimated Quantity	Unit	Unit Cost	Estimated Amount
0012	Option No. 1: All work required by the plans and specifications for **Repairing and Painting the Machinery and Handrails; and Repainting all Exposed Metal Surfaces on the Tainter Gate Spillway.**	Job	Sum	***	$_____
0013	Option No. 2: All work required by the plans and specifications for **Repairing and Repainting the Overhead Crane, Crane Rigid Frames, and Crane Girders.**	Job	Sum	***	$_____
0014	Option No. 3: All work required by the plans and specifications for **Providing and Installing New Handrails on the Piers**	Job	Sum	***	$_____
0015	Option No. 4: All work required by the plans and specifications for **Replacing Lighting, Receptacles, Conduit/Conductors, Circuit Breakers, and the Transformer.**	Job	Sum	***	$_____

TOTAL BASE BID PLUS OPTIONS 1, 2, 3, & 4 $_____

BIDDING SCHEDULE (cont)

NOTES:

1. ARITHMETIC DISCREPANCIES: (1989 JUL)

(a) For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of the bidding schedule as submitted by bidders:

(1)Obviously misplaced decimal points will be corrected;

(2)In case of discrepancy between unit price and extended price, the unit price will govern;

(3)Apparent errors in extension of unit prices will be corrected; and

(4)Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purposes of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, extensions, and totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids. (EFARS 14.406-2)

2. If a modification to a bid based on unit prices is submitted, which provides for a lump sum adjustment to the total estimated cost, the application of the lump sum adjustment to each unit price in the bid schedule must be stated. If it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the bid schedule.

3. Bidders must bid on all items.

4. Costs attributable to Division 01 - General Requirements are assumed to be prorated among bid items listed.

5. Responders are advised that this requirement may be delayed, canceled or revised at any time during the solicitation, selection, evaluation, negotiation and/or final award process based on decisions related to DOD changes in force structure and disposition of the Armed Services.

6. For the purpose of this solicitation, the word "item" shall be considered to mean "schedule" as used in Provision 52,214-0019, CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION, in Section 00100 INSTRUCTIONS, CONDITIONS, AND NOTICES TO BIDDERS, excluding additives, deductives or options

7 EVALUATION OF OPTIONS (JUL 1990) (FAR 52.217-5)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

BIDDING SCHEDULE (cont)

8 OPTION FOR INCREASED QUANTITY – SEPARATELY PRICED LINE ITEM (MAR 1998) (FAR 52.217-7)

The Government may require the completion of the numbered line item, identified in he Bidding Schedule as an option item, in the quantity and at the price stated in the Bidding Schedule. The Contracting Officer may exercise the option by written notice to the Contractor within the period specified in the Bidding Schedule. Completion of added items shall continue at the same schedule as the Base Bid unless otherwise noted in the SPECIAL CONTRACT REQUIREMENTS, paragraph 1 entitled COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK.

9. The Government reserves the right to exercise the option(s) either singularly or in any combination for up to **180** calendar days after award of the Base Bid without an increase in the Offeror's Bid Price.

10. ABBREVIATIONS

For the purposes of this solicitation, the units of measure are represented as follows:

EA (Each)

BIDDING SCHEDULE (cont)

11. DESCRIPTION OF BID ITEMS

0001 Structural repair and paint gate #1:

Repaint all exposed metal surfaces on the six tainter gates including usptream and downstream surfaces, trunnion girders and supporting structure.

Perform non-destructive examination (NDE) of existing welds.

Replace the side seals and rollers on both sides of gate.

Install anodes.

Install new dogging pads on both ends of the top and middle girders.

Remove the remnants of the ladders.

Retension the hoisting cables.

Repair and repaint both dogging hooks.

Replace selected deteriorated and damaged secondary members.

Repair selected steel parts and members using heat straightening.

Attach new cover plates to the outer two skin plate ribs, the skin plate ribs below each lower gider, and to the outer two end frame braces.

Repair the corroded posts on both trunnions.

Repair the webs of the secondary members on both end frames and x-frames.

0001AA Repair pits on the skin plate that are over 1/8" deep as directed by the contracting officer.

BIDDING SCHEDULE (cont)

11. DESCRIPTION OF BID ITEMS (Cont'd)

0002 Structural repair and paint gate #2:

Repaint all exposed metal surfaces on the six tainter gates including usptream and downstream surfaces, trunnion girders and supporting structure.

Perform non-destructive examination (NDE) of existing welds.

Replace the side seals and rollers on both sides of gate.

Install anodes.

Install new dogging pads on both ends of the top and middle girders.

Remove the remnants of the ladders.

Retension the hoisting cables.

Repair and repaint both dogging hooks.

Replace selected deteriorated and damaged secondary members.

Repair selected steel parts and members using heat straightening.

Attach new cover plates to the outer two skin plate ribs, the skin plate ribs below each lower gider, and to the outer two end frame braces.

Repair the corroded posts on both trunnions.

Repair the webs of the secondary members on both end frames and x-frames.

0002AA Repair pits on the skin plate that are over 1/8" deep as directed by the contracting officer.

BIDDING SCHEDULE (cont)

11. DESCRIPTION OF BID ITEMS (Cont'd)

0003 Structural repair and paint gate #3:

Repaint all exposed metal surfaces on the six tainter gates including usptream and downstream surfaces, trunnion girders and supporting structure.

Perform non-destructive examination (NDE) of existing welds.

Replace the side seals and rollers on both sides of gate.

Install anodes.

Install new dogging pads on both ends of the top and middle girders.

Remove the remnants of the ladders.

Retension the hoisting cables.

Repair and repaint both dogging hooks.

Replace selected deteriorated and damaged secondary members.

Repair selected steel parts and members using heat straightening.

Attach new cover plates to the outer two skin plate ribs, the skin plate ribs below each lower gider, and to the outer two end frame braces.

Repair the corroded posts on both trunnions.

Repair the webs of the secondary members on both end frames and x-frames.

0003AA Repair pits on the skin plate that are over 1/8" deep as directed by the contracting officer.

BIDDING SCHEDULE (cont)

11. DESCRIPTION OF BID ITEMS (Cont'd)

0004 Structural repair and paint gate #4:

Repaint all exposed metal surfaces on the six tainter gates including usptream and downstream surfaces, trunnion girders and supporting structure.

Perform non-destructive examination (NDE) of existing welds.

Replace the side seals and rollers on both sides of gate.

Install anodes.

Install new dogging pads on both ends of the top and middle girders.

Remove the remnants of the ladders.

Retension the hoisting cables.

Repair and repaint both dogging hooks.

Replace selected deteriorated and damaged secondary members.

Repair selected steel parts and members using heat straightening.

Attach new cover plates to the outer two skin plate ribs, the skin plate ribs below each lower gider, and to the outer two end frame braces.

Repair the corroded posts on both trunnions.

Repair the webs of the secondary members on both end frames and x-frames.

0004AA Repair pits on the skin plate that are over 1/8" deep as directed by the contracting officer.

BIDDING SCHEDULE (cont)

11. DESCRIPTION OF BID ITEMS (Cont'd)

0005 Structural repair and paint gate #5:

Repaint all exposed metal surfaces on the six tainter gates including usptream and downstream surfaces, trunnion girders and supporting structure.

Perform non-destructive examination (NDE) of existing welds.

Replace the side seals and rollers on both sides of gate.

Install anodes.

Install new dogging pads on both ends of the top and middle girders.

Remove the remnants of the ladders.

Retension the hoisting cables.

Repair and repaint both dogging hooks.

Replace selected deteriorated and damaged secondary members.

Repair selected steel parts and members using heat straightening.

Attach new cover plates to the outer two skin plate ribs, the skin plate ribs below each lower gider, and to the outer two end frame braces.

Repair the corroded posts on both trunnions.

Repair the webs of the secondary members on both end frames and x-frames.

0005AA Repair pits on the skin plate that are over 1/8" deep as directed by the contracting officer.

BIDDING SCHEDULE (cont)

11. DESCRIPTION OF BID ITEMS (Cont'd)

0006 Structural repair and paint gate #6:

Repaint all exposed metal surfaces on the six tainter gates including usptream and downstream surfaces, trunnion girders and supporting structure.

Perform non-destructive examination (NDE) of existing welds.

Replace the side seals and rollers on both sides of gate.

Install anodes.

Install new dogging pads on both ends of the top and middle girders.

Remove the remnants of the ladders.

Retension the hoisting cables.

Repair and repaint both dogging hooks.

Replace selected deteriorated and damaged secondary members.

Repair selected steel parts and members using heat straightening.

Attach new cover plates to the outer two skin plate ribs, the skin plate ribs below each lower gider, and to the outer two end frame braces.

Repair the corroded posts on the right trunnion.

Repair the webs of the secondary members on both end frames and x-frames.

0006AA Repair pits on the skin plate that are over 1/8" deep as directed by the contracting officer.

BIDDING SCHEDULE (cont)

0007 Repair and Paint Bulkheads:

Repaint the bulkheads with system xx.

Replace the side and bottom seals

Replace the bulkhead rollers

0008 Fabricate and paint one new pick-up beam.

0009 Mobilization & Demobilization. (Am#1)

0010 Final record drawings.

Produce final record drawings in MicroStation J format.

0011 Warranty Work

Performs the construction warranty within the timeframes specified under Contract Specifications Section 01770 CONTRACT CLOSEOUT, paragraph "Contractor's Response to Construction Warranty Service Requirements."

BIDDING SCHEDULE (cont)

0012 Option 1: Rework the Machinery.

Repaint the machinery.

Relubricate the machinery and their bases.

Replace the lineshaft bearings, lineshaft bearing housings, and lineshaft bearing stands.

Replace the machinery access covers.

Repair the handrailing on the site

Item deleted (Am#1).

Repaint the catwalks, handrails and security fence

0013 Option 2: Rework the Overhead Crane.

Repaint the crane girders and support frames

Install new fall protection on the overhead crane frames

Repair three column bases on the overhead crane frames

Replac the cables

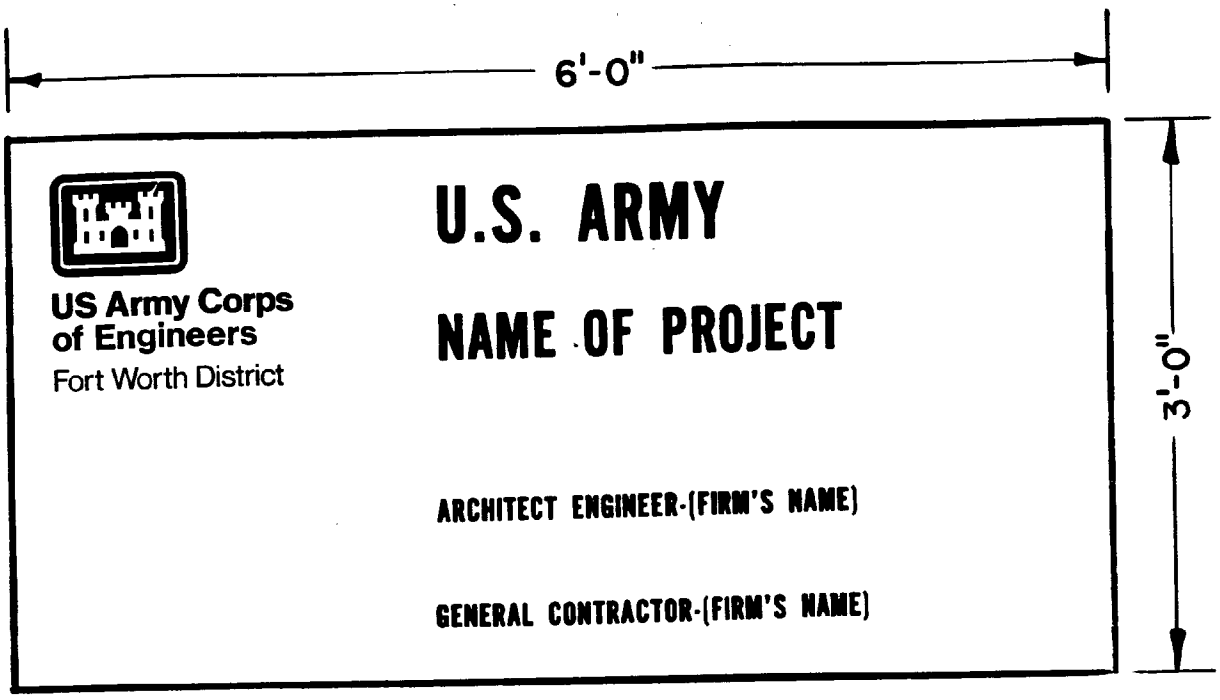
Install a new ladder.

0014 Option 3: Providing and Installing New Handrails on the Piers. (Am#1)

Provide and install new handrails on the Piers.

0015 Option 4: Replace Lighting, Receptacles, Conduit/Conductors, Circuit Breakers, and the Transformer. (Am#1)

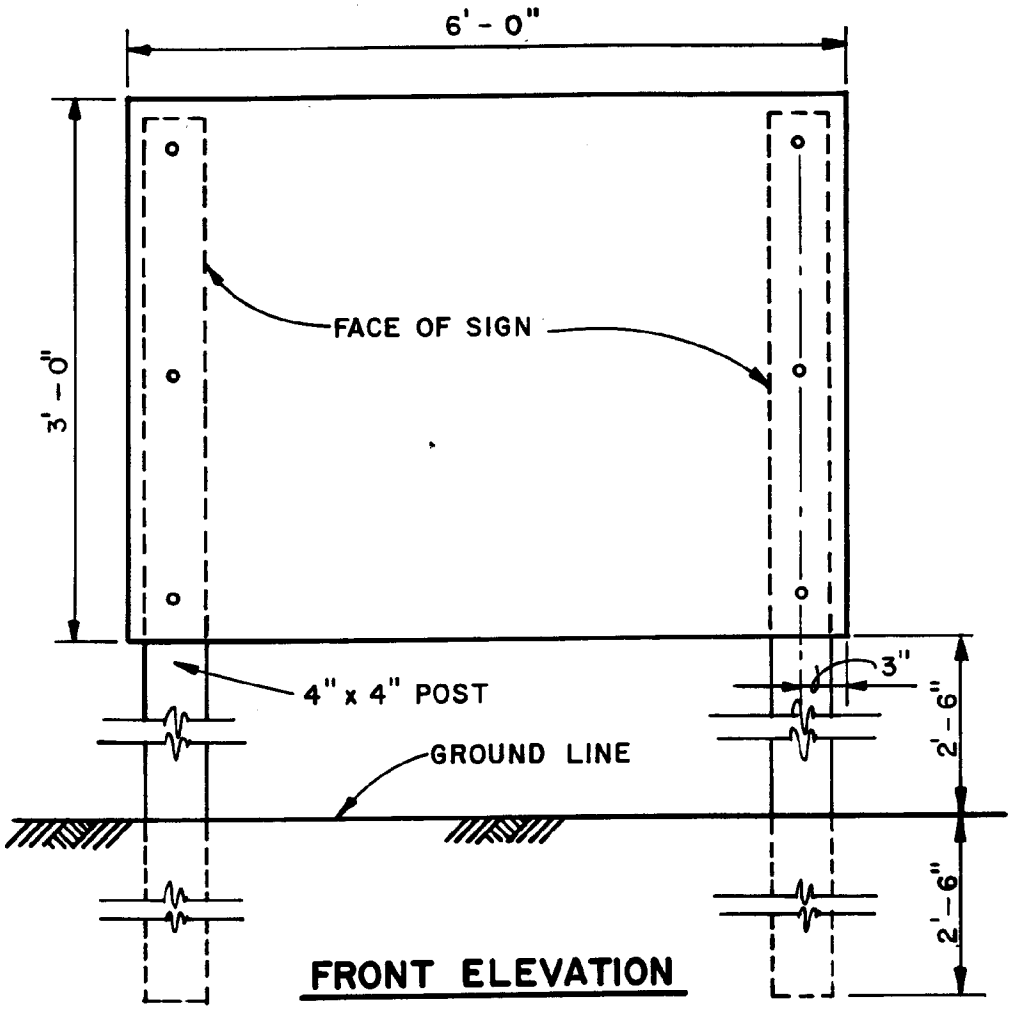
END OF BIDDING SCHEDULE



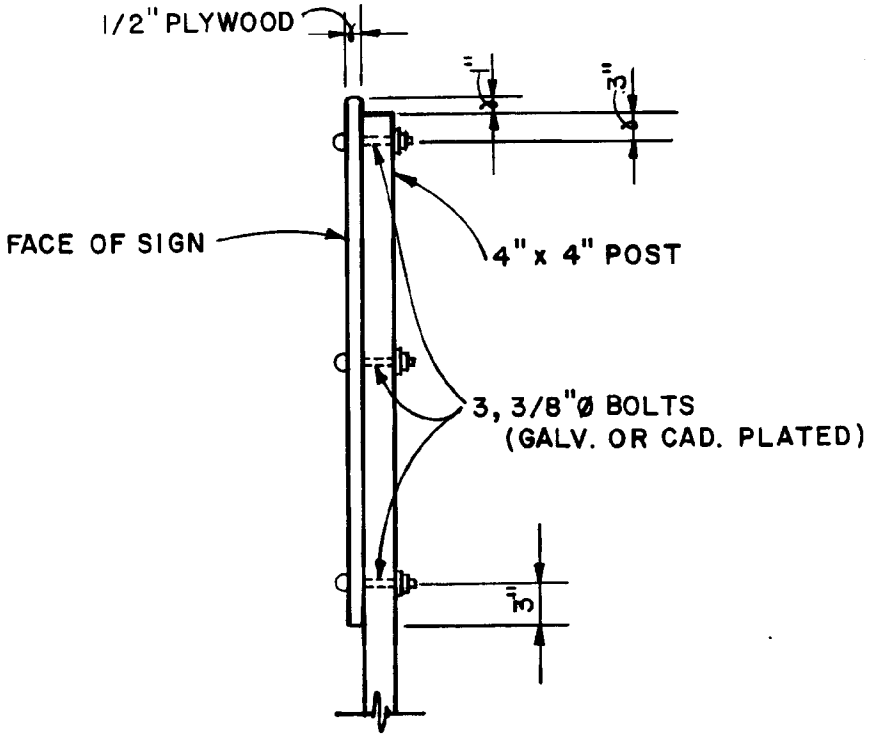
SCHEDULE

LINE	DESCRIPTION	LETTER HEIGHT	STROKE
1	U.S. ARMY	4"	3/4"
2	NAME OF PROJECT	3"	1/2"
3	U.S. ARMY CORPS OF ENGINEERS	1¾"	3/8"
4	FORT WORTH DISTRICT	1½"	5/16"
5	CORPS OF ENGINEERS CASTLE (4" x 6")		
6	ARCHITECT ENGINEER-(FIRM'S NAME)	1½"	1/4"
7	GENERAL CONTRACTOR-(FIRM'S NAME)	1½"	1/4"

PROJECT SIGN LAYOUT



FRONT ELEVATION



SIDE ELEVATION

PROJECT SIGN DETAILS

N.T.S.

SECTION 01770

CONTRACT CLOSEOUT
02/2003
Amendment No. 0001

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

TRI-SERVICE CADD/GIS TECHNOLOGY CENTER (TSC)

TSC-01	A/E/C CADD Standard Manual (Current Release as of Contract Award date)

U.S. ARMY CORPS OF ENGINEERS (COE)

COE-02	ARCHITECTURAL AND ENGINEERING INSTRUCTIONS MANUAL (SWD-AEIM), Southwestern Division (Current issue as of Contract Award date)

1.2 PAYMENT

Contract closeout activities such as, but not limited to, operation and maintenance manuals, record drawings, warranty requirements, equipment warranty identification tags, and inventories, payrolls, and shop drawing submittals, are subsidiary activities of the contract work; separate payment will not be made for any activity unless otherwise specified. Final contract payment will not be made until completion and approval of all contract closeout activities.

1.3 OPERATION AND MAINTENANCE MANUALS

The Contractor shall be responsible for the preparation, coordination, execution and submittal of all operation and maintenance manuals (O & M Manuals), including spare parts lists, special tools, inventories of equipment manuals, and maintenance instructions, and shall conduct all training for operating and service personnel. Operation and maintenance manuals shall cover all system installations provided in this Contract and shall be in sufficient detail to facilitate normal maintenance and troubleshooting by persons with minimum experience with the installed equipment.

1.3.1 Submittal Requirements

All of the above listed items required in the technical specifications shall be fully developed and submitted to the Contracting Officer not less than 120 calendar days prior to the scheduled final acceptance inspection date and prior to scheduling training for operating and service personnel. The Contractor shall coordinate the content of each instruction period required in the technical specifications with the Contracting Officer's Representative prior to the actual start of the training period.

1.3.1.1 Draft O & M Manuals

On those systems where complete and comprehensive operation and maintenance manuals cannot be fully developed until the system(s) is (are) checked, tested, and/or balanced, and the checking, testing, and/or balancing has not been done when submittals are required, a proposed draft of those system manual(s) shall be submitted. The covers of draft O & M Manuals shall be labeled "DRAFT" in large (not less than font size 24), legible, printed letters. Submit fully developed O & M Manuals for approval after the systems have been checked, tested, and/or balanced but prior to the scheduled final acceptance inspection date. The amount indicated in the Bidding Schedule for "Operation and Maintenance Manuals" with be withheld until submittal and approval of all fully developed O & M Manuals.

1.3.1.2 Commencement of Warranty of Construction

Failure to submit all specified O & M manuals, spare parts listings, spare parts, special tools, inventories of installed property, and training video tapes in a timely manner will be considered as delaying substantial completion of the work. Commencement of warranty under the Contract Clause WARRANTY OF CONSTRUCTION will not occur until all these items are delivered and approved by the Contracting Officer, but not earlier than the date of final acceptance of the work by the Government. When the O & M Manuals with drafts are approved they will not constitute a reason for delaying the start of the warranty period.

1.3.2 Government Possession of Work

The Government may take possession of any completed or partially completed work as provided for under Contract Clause entitled "USE AND POSSESSION PRIOR TO COMPLETION." If the installed equipment and/or systems thereto, have not been accepted by the Government due to the Contractor's failure to submit the above specified items, the Contractor shall operate and maintain such plant or system at no additional cost to the Government until such time that the specified items have been received, approved and any subsequent testing, check-out and/or training has been completed.

1.4 PREPARATION AND SUBMISSION OF OPERATION AND MAINTENANCE MANUALS

This paragraph establishes general requirements for the preparation and submission of equipment operating, maintenance, and repair manuals as called for in the various sections of the specifications. Specific instruction(s) relating to a particular system or piece of equipment shall be incorporated into the manuals in accordance with the applicable technical specification.

1.4.1 General Requirements

Furnish operations and maintenance manuals on CD-ROM disk along with the number of hard copies specified in the technical sections. When the number of copies are not specified, furnish one single hard copy. Documents on the CD-ROM disk shall be in portable document format (.pdf); all printed and graphic documents, drawings, and illustrations shall be legible and bookmarked. Hard copy requirements are specified below.

1.4.1.1 Hard Cover Binders

The manuals shall be 3-ring binders with a hard cover, from which material may readily be removed and replaced. Binders shall have a separate section for each system or subsystem. Separate the sections with heavy plastic dividers having tabs which identify the material in the section. The following identification shall be inscribed on the cover: the words "EQUIPMENT OPERATING, MAINTENANCE, AND REPAIR MANUAL:" and the name, building number, location, and indication of utility or systems covered. Manuals shall be approximately 8-1/2 by 11 inches with large sheets folded in and capable of being easily pulled out for reference. All manuals for a single facility must be similar in appearance.

1.4.1.2 Warning Page

A warning page shall be provided to warn of potential dangers (if they exist), such as high voltage, toxic chemicals, flammable liquids, explosive materials, carcinogens, or high pressures. The warning page shall be placed inside the front cover, in front of the title page.

1.4.1.3 Title Page

The title page shall show the name of the preparing firm (designer or contractor) and the date of publication.

1.4.1.4 Table of Contents

Provide in accordance with standard commercial practice.

1.4.2 Equipment Operating, Maintenance, and Repair Manuals

1.4.2.1 General

Separate manuals shall be provided for each utility system as defined hereinafter. Manuals shall be provided in the number of copies specified in the applicable technical section. Manuals shall include, in separate sections, the following information for each item of equipment. These requirements may be supplemented by additional requirements specified in the technical sections:

a. Performance sheets and graphs showing capacity data, efficiencies, electrical characteristics, pressure drops, and flow rates. Marked-up catalogs or catalog pages do not satisfy this requirement. Performance information shall be presented as concisely as possible and contain only data pertaining to equipment actually installed.

b. Catalog cuts showing application information.

c. Installation information showing minimum acceptable requirements.

d. Operation and maintenance requirements. Include adequate illustrative material to identify and locate operating controls, indicating devices and locations of areas or items requiring maintenance.

(1) Describe, in detail, starting and stopping procedures for components, adjustments required to obtain optimum equipment performance, and corrective actions for malfunctions.

(2) Maintenance instructions describing the nature and frequency of routine maintenance and procedures to be followed. Indicate any special tools, materials, and test equipment that may be required.

e. Repair information including diagrams and schematics, guidance for diagnosing problems, and detailed instructions for making repairs. Provide troubleshooting information that includes a statement of the indication or symptom of trouble and the sequential instructions necessary. Include test hookups to determine the cause, special tools and test equipment, and methods for returning the equipment to operating conditions. Information may be in chart form or in tabular format with appropriate headings.

f. Parts lists with names and addresses of closest parts supply agencies, the current unit prices, and the sources of supply. Include spare parts data for each different item of materials and equipment specified.

g. Names and addresses of local manufacturers representatives.

1.4.2.2 Miscellaneous Systems

Information shall be provided on the following: Communication and ADP systems, security and intrusion alarm, elevators, material handling, active solar, photovoltaic, and other similar type special systems not otherwise specified.

1.5 RECORD DRAWINGS

Record drawings shall be a record of the construction as installed and completed by the Contractor. They are a record of all deviations, modifications, or changes from contract set of drawings, however minor, which were incorporated in the work. They include all the information shown on the contract set of drawings, any Contractor-original drawings, all additional work not appearing on the contract drawings, and all changes which are made after final inspection of the work.

1.5.1 Contractor-Original Record Drawings

Contractor-original record drawings are those drawings drawn by the Contractor, to further explain the Contract documents such as subcontractor submittals for fire protection/detection, communication, and other systems, and approved Contractor's solutions to problems. Submit these drawings as full-size reproducible sheets and CADD files. CADD files shall conform to the Working CADD file requirements specified in paragraph "Final Record Drawings."

1.5.2 Preliminary Record Drawings

The Contractor shall mark up both a reproducible set and a set of prints to show as-built conditions. These two sets, hereafter called preliminary record drawings, or singly, reproducibles or prints, shall be kept current and available on the jobsite at all times, except as noted below. A member of the Contractor's Quality Control Organization shall be assigned responsibility for the maintenance and currency of the preliminary record drawings. This assignment and any reassignment of duties concerning the maintenance of the record drawings shall be promptly reported to the Contracting Officer's representative for approval. All changes from the contract drawings which are made in the work or additional information which might be uncovered in the course of construction, including uncharted utilities, shall be accurately and neatly recorded as they occur by means of details and notes. All changes and/or required additions to the preliminary record drawings shall be clearly identified in a contrasting color and which is compatible with reproduction of the preliminary record drawings. Preliminary record drawings shall be updated by Friday of each week. During periods when the reproducibles are being copied and are therefore not available at the jobsite, the Contractor shall continue posting all required data to the prints. The Contractor shall minimize the time that the reproducibles are away from the jobsite and shall update them with all as-built data immediately upon their return. The preliminary record drawings will be jointly inspected for accuracy and completeness by the Contracting Officer's representative and the assigned representative of the Contractor's Quality Control Organization prior to submission of each monthly pay estimate. See paragraph, "Withholding for Preliminary Record Drawings." The record drawings shall show the following information, but not be limited thereto:

a. The location and description of utility lines or other installation of any kind or description known to or found to exist within the construction area. The location of exterior utilities includes actual measured horizontal distances from utilities to permanent facilities/ features. These measurements shall be within an accuracy range of 6 inches and shall be shown at sufficient points to permit easy location of utilities for future maintenance purposes. Measurements shall be shown for all change of direction points and all surface or underground components such as valves, manholes, drop inlets, cleanouts, meter, etc. The general depth range of each underground utility line shall be shown (i.e., 3 to 4 feet in depth). The description of exterior utilities includes the actual quantity, size, and material of utility lines.

b. The location and size of all uncharted existing utilities encountered.

c. The location and dimensions of any changes within the building or structure.

d. Correct grade or alinement of roads, structures or utilities if any changes were made from contract drawings.

e. Correct elevations if changes were made in site grading.

f. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

g. The topography and grades of all drainage installed or affected as a part of the project construction.

h. Options

Where contract drawings or specifications allow options, only the option selected for construction shall be shown on the record drawings.

1.5.2.1 Blue Line or Black Line Prints

Blue line or black line prints shall be full size. All blue or black line prints shall exhibit good readable print with clear, sharp, dark lines, and shall not be smeared, faded, double imaged, or have torn or ragged edges.

1.5.2.2 Prefinal Inspection For Each Item of Work

As part of the prefinal inspection for each item of work, the preliminary record drawings will be reviewed. They shall comply with this specification prior to scheduling the final inspection, and/or prior to substantial completion of the item of work.

1.5.2.3 Preliminary Record Drawing Final Submittal

Prior to scheduling the final acceptance inspection of the last or only bid schedule item of work, the preliminary record drawings shall be completed and delivered to the Contracting Officer's Representative for review and approval. If upon review, the drawings are found to contain errors and/or omissions, they will be returned to the Contractor for corrections. Failure of the Contractor to make timely delivery of the preliminary record drawings on any or all items of work will be cause for the Government to delay substantial completion and to assess liquidated damages in accordance with the terms and conditions of the contract.

1.5.2.4 Withholding for Preliminary Record Drawings

Failure by the Contractor to maintain current and satisfactory preliminary record drawings in accordance with these requirements will result in withholding from progress payments 10 percent of the progress payment amount until such time as the record drawings are brought into compliance. This withheld amount will be indicated on monthly payment estimates until the Contractor has fulfilled these contract requirements.

1.5.2.5 Final Inspection

For each interim item of work, furnish a copy of the preliminary record drawings for that item, which the Contractor has reproduced from the approved preliminary record drawing reproducibles, to the Contracting Officer's representative at the time of final inspection for that item. At the time of final inspection on the last or only item of work, the Contractor shall deliver a copy of the complete set of the approved preliminary record drawings to the Contracting Officer's Representative.

1.5.3 Final Record Drawings

Upon approval of the preliminary record drawings, the Contracting Officer will return the approved preliminary record drawing prints back to the Contractor. The Contractor will then modify the CADD files as may be necessary to correctly show all the features of the project as it was constructed by bringing the contract set into agreement with the preliminary record drawings, including adding additional drawings and CADD files as may be necessary. The Contractor shall furnish the as-built drawings in the same file format as the Working CADD files. The CADD files are located on the Contract CD-ROM disk in Bentley Systems MicroStation. These CADD files are part of the permanent records of this project and the Contractor shall be responsible for the protection and safety thereof until returned to the Contracting Officer. Drawings, tracings, or CADD files damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at the Contractor's expense. CADD files will be audited by the Contracting Officer and for accuracy and conformance to the above specified drafting and CADD standards.

1.5.3.1 Drafting

Only personnel proficient in the preparation of engineering drawings and CADD shall be employed to modify the original contract drawings, prepare additional new drawings, and modify the CADD files. All modifications and new drawings shall conform to applicable requirements specified in the paragraph "CADD Standards." The Contractor shall ensure that all delivered CADD digital files and data (e.g., sheet files, model files, cell/block libraries) are in MicroStation V7 format and adhere to the standards and requirements specified.It is the responsibility of the Contractor to ensure this level of compatibility.

1.5.3.2 CADD Standards

CADD drawings shall be prepared in accordance with the applicable general and discipline-specific provisions for drawing formats, level/layer assignments, line colors, line weights, and line types of the TSC-01 (Tri-Service A/E/C Standards) and the COE-02 ("SWD Architectural and Engineering Instruction Manual (AEIM)), Chapter VIII, "Drawings").

The CADD standards, including seed/prototype files containing the Government's preset standard settings and electronic reference files containing the Government's standard border/title block sheets, are located at the following Web site:

http://tsc.wes.army.mil/products/standards/aec/aecstdweb.asp.

Mark modifications to Contract drawings in accordance with the Fort Worth District's procedures for drawing modifications, which can be found in the document "CONSTRUCTION SOLICITATION, AMENDMENT, AWARD AND MODIFICATION PROCEDURES FOR DRAWINGS" located at http://www.swf.usace.army.mil/, then click on ORGANIZATION, then on Contract Administration Branch, then CADD, "Cadd Amend, Award & As-Built Procedures."

The Contractor shall submit a written request for approval of any deviations from the Government's established CADD standards. Deviations will not be permitted unless prior written approval of such deviations has been received from the Government.

1.5.3.3 Final Revisions

When final revisions have been completed, place the words "REVISED RECORD DRAWING," in letters at least 3/16 inch high, and the date of completion in the revision block above the latest existing revision notation on each drawing CADD file.

1.5.3.4 Border Sheets

The border sheet to be used for any new record drawings shall be the same as used on the original drawings.

1.5.3.5 Copies of the Final Record Drawings

Blue line or black line prints shall be full size. All blue or black line prints shall exhibit good readable print with clear, sharp, dark lines, and shall not be smeared, faded, double imaged, or have torn or ragged edges.

1.5.3.6 35mm Microfilm

35mm microfilm furnished by the Contractor shall meet the following requirements.

(1) 35mm film negatives shall be produced from the drawings as corrected to reflect as-built conditions, using a camera designed for micro-filming engineering drawings. Reduction ratio sahll be between 1:29 and 1:30. Finished film image outside these limits will not be acceptable.

(2) Microfilm shall have a high-contrast emulsion capable of resolving at least 135 lines per mm, and shall be processed in accordance with manufacturer's standards. Film shall be processed and washed to meet archival standards for cleanliness of .005 mg of "hypo" per square inch.

(3) Finished microfilm negatives shall have a uniform bckground density of .8 to 1.1 as read on a standard transmission densitometer. Image lines shall not be blurred or "blocked up" so as to be individually indistinguishable. Negatives shall be capable of photographic enlargement up to the original size of the drawing without appreciable loss of definition as compared to the original drawing.

(4) Finished negatives shall be free of scratches, light paths, fogged areas, water marks and/or air bells.

(5) Film shall be mounted in standard aperture cards, 7-3/8" by 3-1/4", with the title block positioned in the upper left hand corner of the aperature and with the emulsion side of the film down.

(6) Each aperture card shall be identified with the following information typed or legibly written across the top of the card: (1) Name of installation; (2) Contract Number; (3) Plate or sequence number; (4) Title of job (first card only).

(7) 35mm aperture cards for the originals shall be prepared in accordance with MIL-M-9868E for the diazo copies.

(8) See attached sketch of sample aperture card.

1.5.3.7 Submittal Requirements

The Contractor shall submit to the Contracting Officer the final record drawings, consisting of one set of full size blue line or black line prints, one full size vellum reproducible set, and two sets of corrected CADD files on CD-ROM disks; verification that the CADD files have been loaded and work on the designated computer systems and are

error- and virus-free; the approved preliminary blue lines; and all required reproduced items. All paper prints, reproducible drawings, and CADD files will become the property of the Government.

1.5.4 Post-Record Drawing Work

In event the Contractor accomplishes additional work which changes the as-built conditions of the facility after submission of the record drawings, the Contractor shall furnish revised and/or additional drawings (hard copy, as required to depict as-built conditions. The requirements for these additional drawings, will be the same as for the record drawings included in the original submission.

1.5.5 Payment for Final Record Drawings

The amount listed for Final Record Drawings in the Bidding Schedule will be paid to the Contractor upon the Contracting Officer's acceptance of the completed record drawings.

1.6 ADDITIONAL WARRANTY REQUIREMENTS

The warranty requirements specified in this paragraph are in addition to those specified in the Contract Clause WARRANTY OF CONSTRUCTION in Section 00700 CONTRACT CLAUSES.

1.6.1 Performance Bond

It is understood that the Contractor's Performance Bond will remain effective throughout the life of all warranties and warranty extensions. This paragraph is applicable to the Contractor's Warranty of Construction only and does not apply to manufacturers' warranties on equipment, roofing, and other products.

(a) In the event the Contractor or the Contractor's designated representative fails to commence and diligently pursue any work required under the Warranty of Construction Paragraph within a reasonable time after receipt of written notification pursuant to the requirements thereof, the Contracting Officer shall have a right to demand that said work be performed under the Performance Bond by making written notice on the surety. If the surety fails or refuses to perform the obligation it assumed under the Performance Bond, the Contracting Officer shall have the work performed by others, and after completion of the work, shall make demand for reimbursement of any or all expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

(b) Warranty repair work which arises to threaten the health or safety of personnel, the physical safety of property or equipment, or which impairs operations, habitability of living spaces, etc., will be handled by the Contractor on an immediate basis as directed verbally by the Contracting Officer or the Contracting Officer's authorized representative. Written verification will follow verbal instructions. Failure of the Contractor to respond as verbally directed will be cause for the Contracting Officer or the Contracting Officer's authorized representative to have the warranty repair work performed by others and to proceed against the Contractor as outlined in the paragraph (a) above.

1.6.2 Pre-Warranty Conference

Prior to contract completion and at a time designated by the Contracting Officer or Contracting Officer's authorized representative, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of Contract Clause WARRANTY OF CONSTRUCTION. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer or Contracting Officer's authorized representative for the execution of the construction warranty shall be established/reviewed at this meeting.

In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue warranty work action on behalf of the Contractor. This single point of contact will be located within the local service area of the warrantied construction, will be continuously available, and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of Contractor's responsibilities in connection with Contract Clause WARRANTY OF CONSTRUCTION.

1.6.3 Equipment Warranty Identification Tags

The Contractor shall provide warranty identification tags on all equipment installed under this contract. Tags and installation shall be in accordance with the requirements

of Paragraph: EQUIPMENT WARRANTY IDENTIFICATION TAGS.

1.6.4 Contractor's Response to Construction Warranty Service Requirements

Following oral or written notification by the Contracting Officer, the Contractor shall respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. The Contractor shall submit a report on any warranty item that has been repaired during the warranty period. The report shall include the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframes specified, the Government will perform the work and backcharge the construction warranty payment item established. Payment for this activity will be as follows: 25 percent after six months of the warranty period has passed; the remaining 75 percent will be paid at the end of the warranty period, if there are no outstanding warranty items.

a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

b. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.

d. The "Construction Warranty Service Priority List" is as follows:

Code 1-Air Conditioning Systems
(1) Recreational support.
(2) Air conditioning leak in part of building, if causing damage.
(3) Air conditioning system not cooling properly.

Code 1-Doors
(1) Overhead doors not operational, causing a security, fire, or safety problem.
(2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors
(1) Overhead doors not operational.
(2) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical
(1) Power failure (entire area or any building operational after 1600 hours).
(2) Security lights
(3) Smoke detectors

Code 2-Electrical
(1) Power failure (no power to a room or part of building).
(2) Receptacle and lights (in a room or part of building).

Code 3-Electrical
Street lights.

Code 1-Gas
(1) Leaks and breaks.
(2) No gas to family housing unit or cantonment area.

Code 1-Heat
(1). Area power failure affecting heat.
(2). Heater in unit not working.

Code 2-Kitchen Equipment
(1) Dishwasher not operating properly.
(2) All other equipment hampering preparation of a meal.

Code 1-Plumbing
(1) Hot water heater failure.
(2) Leaking water supply pipes.

Code 2-Plumbing
(1) Flush valves not operating properly.
(2) Fixture drain, supply line to commode, or any water pipe leaking.

(3) Commode leaking at base.

Code 3 -Plumbing
Leaky faucets.

Code 3-Interior
(1) Floors damaged.
(2) Paint chipping or peeling.
(3) Casework.

Code 1-Roof Leaks
Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks
Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)
No water to facility.

Code 2-Water (Hot)
No hot water in portion of building listed.

Code 3-All other work not listed above.

1.6.5 Commencement of Warranty Period (Am#1)

The warranty period shall not commence until the last of the Tainter Gates is completed and the Government accepts the work performed under the project as substantially complete. The incremental completion of a specific Tainter Gate will not start the commencement of the warranty for that gate.

1.7 EQUIPMENT WARRANTY IDENTIFICATION TAGS

1.7.1 General Requirements

The Contractor shall provide warranty identification tags on all Contractor and Government furnished equipment which he has installed.

1.7.1.1 Tag Description and Installation

The tags shall be similar in format and size to the exhibits provided by this specification, they shall be suitable for interior and exterior locations, resistant to solvents, abrasion, and to fading caused by sunlight, precipitation, etc. These tags shall have a permanent pressure-sensitive adhesive back, and they shall be installed in a position that is easily (or most easily) noticeable. Contractor furnished equipment that has differing warranties on its components will have each component tagged.

1.7.1.2 Sample Tags

Sample tags shall be submitted to the Contracting Officer's Authorized Representative for review and approval. These tags shall be filled out representative of how the Contractor will complete all other tags.

1.7.1.3 Tags for Warranted Equipment

The tag for this equipment shall be similar to the following. Exact format and size will be as approved by the Contracting Officer's Authorized Representative. The Contractor warranty expires (warranty expiration date) and the final manufacturer's warranty expiration dates will be determined as specified by the Paragraph "WARRANTY OF CONSTRUCTION."

EQUIPMENT WARRANTY CONTRACTOR FURNISHED EQUIPMENT
MFG_____ MODEL NO._____
SERIAL NO._____
CONTRACT NO._____
CONTRACTOR NAME_____
CONTRACTOR WARRANTY EXPIRES_____
MFG WARRANTY(IES) EXPIRE_____
WARRANTY [ ]REPAIRS/[ ]REPLACEMENT MADE:_____
WARRANTY [ ]REPAIRS/[ ]REPLACEMENT MADE:_____

1.7.1.4 Duplicate Information

If the manufacturer's name (MFG), model number, and serial number are on the manufacturer's equipment data plate and this data plate is easily found and fully legible, this information need not be duplicated on the equipment warranty tag.

1.7.2 Execution

The Contractor will complete the required information on each tag and install these tags on the equipment by the time of and as a condition of final acceptance of the equipment. The Contractor will schedule this activity in the Contractor progress reporting system. The final acceptance inspection is scheduled based upon notice from the Contractor, thus if the Contractor is at fault in this inspection being delayed, the Contractor will, at the Contractor's own expense, update the in-service and warranty expiration dates on these tags.

1.7.3 Payment

The work outlined above is a subsidiary portion of the contract work, and has a value to the Government approximating 5% of the value of the Contractor furnished equipment. The Contractor will assign up to that amount, as approved by the Contracting Officer's Authorized Representative.

1.7.4 Updating Equipment Warranty Tags

Repairing or replacing warranted equipment shall include an updated warranty identification tag on the repaired or replaced equipment. Using a fine point permanent marker pen, update the tag by checking whether the equipment was repaired or replaced, and indicate the date the work was completed. If the equipment was replaced, furnish a new tag, identical to the original tag, except that the MFG., MODEL NO., SERIAL NO., and DATE EQUIP PLACED IN SERVICE items shall be updated. Also, check the box indicating that the equipment has been replaced and indicate the date of replacement.

1.8 INVENTORY OF CONTRACTOR FURNISHED AND INSTALLED EQUIPMENT

A list of equipment or units of equipment that require electrical power or fuel, or may require removal or replacement such as AHUs, fans, air conditioners, compressors, condensers, boiler, thermal exchangers, pumps, cooling towers, tanks, fire hydrants, sinks, water closets, lavatories, urinals, shower stalls, and any other large plumbing fixtures, light fixtures, etc., shall be made and kept up to date as installed. The list shall be reviewed periodically by the Government to insure completeness and accuracy. Partial payment will be withheld for equipment not incorporated in the list. List shall include on each item as applicable: Description, Manufacturer, Model or Catalog No., Serial No., Input (power, voltage, BTU, etc.), Output (power, voltage, BTU, tons, etc.), Size or Capacity (tanks), and net inventory costs; any other data necessary to describe item and shall list all warrantors and warranty periods for each item of equipment. Final list shall be turned over to the Authorized Representative of the Contracting Officer at the time of the Contractor's quality control completion inspection.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

SECTION 02141

CARE OF WATER DURING CONSTRUCTION
03/2002
Amendment No. 0001

PART 1 GENERAL

This section covers all care of water activities required to complete all work in this Contract. The Contractor shall control water in the construction area regardless of its source or quantity. Special note should be taken that much of the construction area is wet with both standing and flowing seepage water. This section also covers historical lake elevations for B.A. Steinhagen Lake and river stages in feet for the Neches River near Town Bluff.

1.1 REFERENCES (NOT APPLICABLE)

1.2 MEASUREMENT

Care of water during construction will not be measured for payment purposes.

1.3 PAYMENT

Payment for care of water during construction for the duration of the contract is included and subsidiary to the bid items, "Structural Repair and Paint Gates #1- #6." This will constitute full compensation for furnishing all plant, labor, equipment and materials, and for performing all operations in connection with the care of water during construction in accordance with the applicable contract drawings and these specifications. Failure to adequately care for water may cause difficulties in properly completing portions of this contract. No additional payments will be made for such difficulties if they are determined to be a result of inadequate care of water.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROICEDURES:

SD-01 Preconstruction Submittals

Sequence of Operations (Work Plan); .

The Contractor shall submit detailed plans for control of water in accordance with paragraph SEQUENCE OF OPERATIONS (WORK PLAN).

1.5 SEQUENCE OF OPERATIONS (WORK PLAN)

The Contractor shall design, devise and submit detailed plans for control of water during contract work done at each gate that includes but is not limited to repairs, replacing parts, preparations of surfaces for painting, and painting of the gates. Plans shall be submitted for review to the Contracting Officer at least 15 days prior to the start of work in that area. Review by the Contracting Officer is to determine the general suitability of the plans and shall not relieve the Contractor of maintaining and operating the system to assure the work is performed in the dry. Prior to the start of work on each gate, the government will install the upstream bulkheads. There is one set of bulkheads consisting of ten stoplogs for the entire project. There are no downstream bulkheads so the water downstream of the gate will remain wet depending on the water elevation in the river. It is assumed that the Contractor will use the gate dogging device along with tonnage to position gate for the required work to be accomplished. If, during the course of the work, it is determined that the diversion and dewatering system or other item is inadequate, or the Contractor's plan of construction is inoperative, the Contractor shall (at his own expense) furnish, install, construct and operate such additional pumps, temporary water conveyance systems, and dewatering equipment and make such changes in other features of the plan of construction and operation as may be necessary to perform the work. The plan shall describe the planned sequence and method of construction operations and shall include drawings, narrative, calculations and proposed water handling features necessary to control water from seepage. Construction operations shall provide for positive drainage at all times.

Compliance with environmental regulations shall be considered when planning the sequence of operations. Barricades, signs, flagmen and lights which are required for safety shall be included in the plan. All proposed haul routes shall be submitted for review and approval to the Contracting Officer's Representative. Upon completion of each portion of the contract work, all temporary construction shall be removed as approved. Care shall be taken during removal operations for protection of the permanent work and any damage to permanent construction shall be repaired by and at the expense of the Contractor.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 EXISTING CONDITIONS

Much of the construction area is wet from tailwater and from leaks in the bulkheads.

3.2 DEWATERING

3.2.1 Bulkheads

The Government has bulkheads for holding back the lake water to allow maintenance on the tainter gates. Each pier and the two abutments have slots in the upstream side of the gate for these bulkheads to seal off the water from the upstream side of the gates. The Government will install these bulkheads prior to allowing the contractor to commence work on a gate. The bulkheads are installed through the use of the overhead crane at the site and a special lifting beam that attaches to tops of each bulkhead unit. The Government has ten individual bulkhead units and all ten units are required to protect one gate from the lake. There are no downstream bulkheads and the upstream bulkheads will not completely dewater a gate bay. The water on the downstream side of the tainter gates will correspond to the river elevation downstream of the lake. The bulkheads do leak through their side seals and the contractor shall be responsible for providing materials and labor to seal the bulkheads. The contractor shall include the means and method of sealing the bulkheads in the sequence of operations submittal required under this specification. Furthermore, the contractor shall ensure the method of sealing the bulkheads is in compliance with all environmental and water quality regulations of the Federal Government and the State of Texas.

3.2.2 Restrictions

The Government will be responsible for installing and moving the bulkheads, and for operating the overhead crane. Government personnel will be available during the contractor's work hours to operate the overhead crane and move the bulkheads as required.

3.2.3 Miscellaneous

The Contractor shall construct other protective measures that may be necessary to provide a work area that is dry enough to permit the construction activities. The Government does not require the contractor to completely dewater a bay to work on a gate. Any means of dewatering shall be included in the sequence of operations submittal required under this specification. **There are bulkhead slots on the downstream piers and abutments. If the contractor choses to provide downstream bulkheads in his dewatering plan, he would need to submit for approval his design and proposed method of installation. The existing overhead crane can not be used for placing of the downstream bulkheads. (Am#1)**

3.3 LAKE DISCHARGE/RELEASE DATA

It is the intent of the government to make the maximum possible releases through the off channel powerhouse, thus reducing required releases through the gated structure. There are six tainter gates in the structure, and with prior coordination with the Contracting Officer, it may be possible to shift required releases through gates that least affect the contractors work activities. If delays due to releases beyond that stated above extend the contract completion, the contractor may apply for an extension of the contract completion date under applicable contract provisions. Plots of historical lake and river elevations are provided in these specifications.

3.4 CLEANUP

Upon completion of the contract work for each gate, all temporary construction and access ramps shall be removed as approved. Care shall be taken during removal operations to protect the permanent work and existing structures, and any damages to permanent construction or structures shall be repaired by and at the expense of the Contractor.

-- End of Section --

SECTION 05092

NONDESTRUCTIVE EXAMINATION OF EXISTING WELDS

Amendment #1

PART 1 GENERAL

1.1 SCOPE

This section covers the nondestructive examination (NDE) of existing welds on the tainter gates and other items indicated on the drawings. This section does not cover the nondestructive examination of welds the contractor makes as part of other contract work. Specifcations for NDE of welds the contractor makes are in Section 05090: WELDING, STRUCTURAL.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)

ASNT RP SNT-TC-1A	(1996) Recommended Practice SNT-TC-1A
ASNT Q&A Bk C	(1994) Question and Answer Book C: Ultrasonic Testing Method; Levels I, II, III (Supplement to RP SNT-TC-1A)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM E 165	(1995) Liquid Penetrant Examination
ASTM E 709	(1995) Magnetic Particle Examination

AMERICAN WELDING SOCIETY (AWS)

AWS A3.0	(2001) Standard Welding Terms and Definitions
AWS D1.5	(2002) Bridge Welding Code

1.3 DEFINITIONS

1.3.1 NDT Level I

An NDT Level I individual should be qualified to properly perform specific calibrations, specific nondestructive test (NDT), and specific evaluations for acceptance or rejection determinations according to written instructions, and to record results.

1.3.2 NDT Level III

An NDT Level II individual should be qualified to set up and calibrate equipment and to interpret and evaluate results with respect to applicable codes, standards, and specifications.

1.3.3 NDT Level III

An NDT Level III individual should be capable of establishing techniques and procedures; interpreting codes, standards, specifications, and procedures; and designating the particular NDT methods, techniques, and procedures to be used.

1.4 GENERAL REQUIREMENTS

The procedures, methods, standards, and description of equipment specified herein shall be used for inspection of welds. Nondestructive examinations shall be made to determine the in-situ condition of specific welds identified on the drawings.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the

Government. The following shall be submitted in accordance with Section 01330: SUBMITTAL PROCEDURES

SD-07 Certificates

Inspector Qualifications;

Certified statements that all personnel assigned to perform NDE are qualified for the method and procedures specified on the drawings and herein.

SD-06 Test Reports

Testing and Inspection Report; G

A complete report and test data detailing the findings of the NDE and any conclusions of the NDE technician.

1.6 PROCEDURES AND ACCEPTANCE CRITERIA

The procedures and acceptance criteria for all specified weld tests are listed in AWS D1.5. The Government will not hold the contractor responsible for defects found in existing welds. Should application of a specified procedure not provide good resolution, the contractor shall make changes in the procedure to provide for the best posible resolution.

1.7 EQUIPMENT

The equipment used for the nondestructive examination shall meet the requirements of ASW D1.1.

1.8 PERSONNEL QUALIFICATION AND REQUIREMENTS

Personnel assigned to perform nondestructive examination shall meet the qualifications required by AWS D1.5. The certification of personnel shall be within 1 year before the date of the contract. If the Contracting Officer doubts an individual's ability as a nondestructive technician, the Goverment may require that individual to be retested and recertified under the requirements of AWS D1.5 before continuing work.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 PREPARATION OF MATERIALS FOR INSPECTION

Surfaces of welds to be tested shall be properly prepared in accordance with the standards prescribed in AWS D1.5

3.2 INSPECTION PROCEDURE

The procedures for specified NDE methods are defined in AWS D1.5.

3.3 GENERAL ACCEPTANCE/REJECTION REQUIREMENTS

The acceptance criteria for each specified NDE method is listed in AWS D1.5. The Government will not hold the contractor liable for welds the contractor did not make that do not meet the acceptance criteria.

3.4 **(AM#1) GOVERNMENT NOTIFICATION OF BAD WELDS**

The Contractor shall notify the Contracting Officers Representative immediately of any cracked welds or discontinuities found while testing.

3.5 REPORT PREPARATION

The findings of the nondestructive examination of all welds specified on the drawings shall be presented in a technical report. The content and format of this technical report are described below.

3.5.1 Content of Report

The report shall include the following information.

a. Copy of the field report.
b. All results of the nondestructive examination

c. Drawings detailing the locations of all members and welds examined
d. Drawings detailing the locations and dimensions of welds and members that did not meet the acceptance criteria.
e. For welds and members that did not meet the acceptance criteria, a statement explaining what specific criteria that was not met.
f. Color photographs showing deficiencies that are visible.
g. Certification of the nondestructive testing technician's qualifications to perform the tests performed.

3.5.2 Report Format

The report shall be formally bound in a manner to allow easily removing and insertion of pages. The format of the report shall be as follows:

a. A cover and title page bearing the title of the report, the location of the project, the name and logo (if applicable) of the company performing the nondestructive examination, the statement "Prepared for the U.S. Army Engineer District, Fort Worth", and the Corps of Engineer's logo in the lower left corner.
b. A table of contents.
c. An introduction containing an executive summary of the work performed the personnel performing the work.

3.5.3 Number of Reports

The contractor shall supply 5 print copy of the report and 5 electronic copy of the report. The electronic copy shall be in portable document format (*.pdf) and be read by Adobe Acrobat. The electronic copy shall be on a CD.

3.5.4 Copyrights

The findings and report on the nondestructive examination shall be considered the property of the Governemnt. The contractor shall not release the report without the express written permission of the Government.

-- End of Section --

SECTION 05120

REPAIR OF TAINTER GATE MEMBERS

Amendment #1

PART 1 GENERAL

1.1 SCOPE

This section applies to the repair of the structural members of the tainter gates. The specific items of work include: replacing members, heat straightening members, web repairs, attaching cover plates to members, skin plate stiffeners, and skin plate pitting.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC S303	(1992) Code of Standard Practice for Steel Building and Bridges.
AISC S335	(1989) Specification of Structural Steel Buildings - Allowable Stress Design, Plastic Design.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36/A 36M	(2001) Standard Specification for Carbon Structural Steel.

AMERICAN WELDING SOCIETY (AWS)

ANSI/AWS D1.5	(2002) Bridge Welding Code - Steel.

1.3 GENERAL REQUIREMENTS

The AISC S303 and AISC S335 shall govern the work. Welding shall be in accordance with AWS D1.5.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Shop Drawings; G.

Shop Drawings shall include members and connections to be replaced or repaired.

SD-07 Certificates

Welder Qualifications;

Certified copies of welder qualification test records showing qualification in accordance with AWS D1.5 shall be provided.

1.5 STORAGE

Material shall be stored out of contact with the ground and in such manner and location that will minimize deterioration.

1.6 RESPONSIBILITY FOR ERRORS

The Contractor shall be responsible for errors of detailing, fabricating, and for the correct fitting of the structural members.

1.7 PRE-WORK CONFERENCE

The Contractor shall coordinate with Contracting Officer Representative to coordinate with COE Structural Engineer for pre-work conference before work starts on each gate.

PART 2 PRODUCTS

All new steel covered under this section shall be carbon steel that conforms to ASTM A36. Detail drawings of repairs shall be submitted for approval in accordance with the requirements of PARAGRAPH 1.5: SUBMITTALS.

PART 3 EXECUTION

3.1 FABRICATION

Fabrication shall be in accordance with the applicable provisions of the AISC S303 and AISC S335.

3.2 ERECTION

Erection of structural steel shall be in accordance with the applicable provisions of the AISC S303 and AISC S335. Replacement and repair of structural members shall be as indicated on the drawings and as directed by the Contracting Officer. Dimensions for members to be replace shall be field verified by the Contractor.

3.3 FIELD WELDED CONNECTIONS

Field welded structural connections shall be completed before load is applied.

3.4 REPLACEMENT OF STRUCTURAL MEMBERS

The contractor shall replace the damaged and deteriorated structrual members indicated on the contract drawings. Replacement of structural members includes removing the existing member and installing a new member of like size in its place.

3.4.1 REMOVAL OF STRUCTURAL MEMBERS

The existing structural members shall be removed by cutting the section near their connections and grinding off the remaining portion on the parts of the gate to remain. Cutting and grinding shall be done in such a manner as to prevent damage to the gate members to remain.

3.4.2 RESTRICTIONS ON REMOVAL OF MEMBERS

The Government will not allow the contractor to remove more than one member from one single gate at a time. The Government will not allow the contractor to remove a second member until the previous removed member has been completely replaced and all connections made. The Government will not move or operate a gate unless all members are in place. The contractor shall set the sequence of gate repair work such that these restrictions are not violated.

3.4.3 INSTALLATION OF NEW STRUCTURAL MEMBERS

New structural members shall be installed in the same position and alignment as old members or as indicated on the contract drawings. Connection details shall be identical to the original connections as shown on the reference drawings.

3.5 (AM#1) HEAT STRAIGHTENING

(AM#1) The contractor shall heat straighten those parts indicated on the contract drawings in accordance with Section 05910.

3.6 WEB REPAIRS AND COVER PLATES

The contractor shall repair the webs of select members as indicated on the contract drawings. The contractor shall also add cover plates to other members as indicated on the contract drawings. The details are as shown on the contract drawings.

3.7 (AM#1) CORRODED STRUCTURAL MEMBERS

(AM#1) Corrosion areas that are to be repaired shall be blast cleaned prior to starting repair. Grinding of corroded areas of structural members shall be as indicated on drawings. Any ground areas shall be blast cleaned to the required profile prior to

painting. Areas of corrosion that are not indicated on the contract drawings should be brought to the attention of the Contracting Officer.

3.7.1 (AM#1) DELETED

3.8 (AM#1) CORRODED PITS IN SKINPLATE

(AM#1) A pit is defined as a corroded area that is 1/8" in depth or greater and up to 1" in diameter. The corroded pits in the skinplate over 1/8" deep shall be blast cleaned and and filled in with weld metal and ground smooth. Blast cleaning prior to gate painting shall also insure that the welded areas receive the required profile. Sharp edges of corrosion pits under 1/8" deep shall be rounded by blast cleaning.

3.9 ADDITIONAL DAMAGED MEMBERS

If the contractor notices additional damaged or deteriorated members not scheduled for repair, the contractor shall notify the contracting officer.

-- End of Section --

SECTION 05150

REMOVAL, DISPOSAL AND REPLACEMENT OF WIRE ROPE FOR OVERHEAD CRANE

Amendment #1

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

U.S. ARMY CORPS OF ENGINEERS (COE)

COE EM 385-1-1 (Current Edition) Safety and Health Requirements Manual

FEDERAL SPECIFICATIONS (FS)

FS RR-W-410 (Rev. E) Wire Rope And Strand

MATERIAL HANDLING INDUSTRY OF AMERICA (MHI)

MHI CMAA 70 (1994) Electric Overhead Traveling Cranes

CODE OF REGULATIONS (CFR)

29 CFR 1910 Occupational Safety and Health Standards

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Work Procedures; G

The Contractor shall develop work procedures for accomplishing the work and present these procedures to the Contracting Officer at the Pre-construction conference prior to beginning any work.

Wire Rope; G

Prior to beginning work the Contractor shall provide written certification from the supplier that the new wire rope complies with these specifications.

1.3 SAFETY

The Contractor shall exercise all applicable safety requirements in accordance with the Safety and Health Requirements Manual COE EM 385-1-1 copies of which are available from the Lake Project Office or from the following web site: http://www.hq.usace.army.mil/soh/hqusace_soh.htm.

PART 2 PRODUCTS

2.1 [Enter Appropriate Subpart Title Here]2.2 WIRE ROPE

Wire rope shall be stainless steel and meet the requirements of MHI CMAA 70 and Fedral Spec. FS RR-W-410E for a 15 Ton crane .

PART 3 EXECUTION

3.1 GENERAL

12. All materials, workmanship, and methods of work shall be subject to approval by the Contracting Officer or the Contracting Officer's Representative (COR).

3.2 WORK PROCEDURES

1. The Contractor shall furnish all materials, tools, labor and equipment required to remove and dispose of the existing wire rope from the overhead crane and replace it with new stainless steel wire rope. The approximate length of the wire rope on the hoist is 750 feet; however the Contractor shall field verify the exact length required.

2. The Contractor shall be required to remove the existing wire rope from the crane, dispose of it off Government property and replace it with similar strength stainless steel wire rope. The Contractor shall furnish and install new stainless steel wire rope.

3. The Contractor shall pay particular attention to the removal of the existing wire rope from the drum on the crane so that the new wire rope can be installed in exactly the same manner. The length of the new wire rope shall be determined by the Contractor and shall be sufficient to allow the bulkheadsto be set and sealed on the bottom of the spillway at Elevation 50., plus a minimum of four full wraps remaining on the drum.

5. **(AM#1) After removing the existing wire rope, the Contractor shall clean the drum assemblies. Immediately prior to placing the new wire rope on the hoist, the Contractor shall clean and paint the hoist drum in accordance with System No. 1 specified in Section 09965A - Painting: Hydraulic Structures. After proper curing time of the paint, the Contractor shall begin installation of the wire rope and shall lubricate the rope as the new wire rope is being installed in accordance with manufactures recommendation.**

6. Snatch block assemblies or similar devices used by the Contractor shall be of sufficient diameter to prevent over-stressing or kinking of the wire rope during installation. Kinking of the new wire rope during installation shall be cause for rejection.

7. After completion of work as specified, the complete unit shall be tested by raising and lowering the pick-up beam and bulkhead through its complete travel by means of its operating machinery a minimum of three times to demonstrate to Government personnel that all parts are properly installed in satisfactory operating condition and meet the requirements of the specifications. In the event of any unsatisfactory operation due to work performed by the Contractor, the Contractor shall put the equipment in satisfactory operating condition at no extra expense to the Government.

8. Only government personnel shall operate government-owned equipment. The Contractor will not be allowed to operate any government-owned equipment.

3.3 CLEANING

Clean the jobsite upon completion of work of all grease markings, splatters, trash, and debris related to the project; jobsite shall be left as it was upon Contractor arrival.

3.4 Crane Inspection

A crane inspection shall be provided by the contractor near the end of the contract after all work by the crane has been completed. The inspection shall be in accordance with OSHA 29 CFR 1910 and be conducted by a certified crane inspector.

-- End of Section --

SECTION 05501

SIDE SEAL ASSEMBLY FABRICATION

Ammendment #1

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 276	(1994) Stainless and Heat-Resisting Steel Bars and Shapes.
ASTM A 304	(1990) Allow Steel Bars Subject to End-Quench Harden-ability Requirements.
ASTM A 313	(1995) Specifications for Chromium-Nickel Stainless and Heat-Resisting Steel Spring Wire.
ASTM A 325	(1994) Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A 611	(1994) Steel, Sheet, Carbon, Cold-Rolled, Structural Quality.
ASTM D 395	(1994) Test Methods for Rubber Property-Compression.
ASTM D 412	(1992) Test Methods for Rubber Properties in Tension.
ASTM D 413	(1993) Test Methods for Rubber Property - Adhesion to Flexible Substrate.
ASTM D 471	(1995) Test Methods for Rubber Property - Effect of Liquids.
ASTM D 572	(1994) Test Methods for Rubber Deterioration by Heat and Oxygen.
ASTM D 2240	(1991) Test Methods for Rubber Property - Durometer Hardness.
ASTM F 593	(1995) Specification of Stainless Steel Bolts, Hex Cap Screws, and Studs.
ASTM F 594	(1991) Specification of Stainless Steel Nuts.

AMERICAN WELDING SOCIETY (AWS)

AWS D1.5	(1992) Structural Welding Code - Steel.

FEDERAL SPECIFICATIONS (FS)

FS FF-S-85	(Rev CD; Am 1) Screw, Cap, Slotted and Hexagon-Head.
FS FF-N-836	(Rev D; Am 3) Nut: Square, Hexagon, Cap Slotted, Castle Knurled, Welding and Single Ball Seat.
FS HH-G-156	(Rev E; Am 1) Gasket Material, General Purpose; Rubber Sheets, Strips, and Special Shapes.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL

PROCEDURES:

SD-02 Shop Drawings

Miscellaneous Metal Items;
Side Seal Assembly
Angles And Bars

Detail drawings indicating material thickness, type, grade, and class; dimensions; and construction details.

1.3 GENERAL REQUIREMENTS

The Contractor shall verify measurements and shall take field measurements necessary before fabrication. Welding to or on structural steel shall be in accordance with AWS D1.5. Materials and parts necessary to fabricate each side seal assembly shall be included. Removal, reinstalling, and adjusting of side seal assembly shall be as indicated on the drawings.

1.4 WORKMANSHIP

The material to be furnished under this section of the specifications shall be subject to inspection and test in the mill, shop, and field by Government inspectors. However, inspection in the mill or shop shall not relieve the Contractor of his responsibility to furnish satisfactory materials, and the Government reserves the right to reject any materials at any time prior to final acceptance of the completed job, when, in the opinion of the Contracting Officer, the materials or workmanship do not conform to the specification requirements. Inspection and tests by the Government will be without cost to the Contractor.

PART 2 PRODUCTS

2.1 SIDE SEAL ASSEMBLY

2.1.1 Bolts, nuts, cap screws, and washers

Bolts, nuts, screws, and washers shall be as specified below and sized as indicated on the information drawings. Contractor shall apply an anti seizing lubricant to the threads to prevent galling during installation. Bolts, unless otherwise specified, shall have American National form of thread.

2.1.2 Flat Head Cap Screws and Bolts

Flat head cap screws and bolts shall conform to ASTM F 593, Group 1.

2.1.3 Hexagon Head Bolts

Hexagon head bolts shall conform to ASTM F593, Group 1.

2.1.4 Hexagon Nuts

Hexagon nuts shall conform to ASTM F594, Group 1.

2.1.5 Washers

Lock washers shall conform to ASTM A 313, Type 304.

2.1.6 Shims

Shims shall be steel, conforming to ASTM A 6ll, Grade A.

2.1.7 Rubber Washers And Gaskets

Rubber washers and gaskets shall conform to FS HH-G-156e, Type II.

2.2 ANGLES AND BARS

Angles and bars shall be fabricated from ASTM A276, type 410 stainless steel. Welded joints shall be ground smooth with base metal.

2.3 RUBBER GATE SEALS

Rubber gate seals shall be molded rubber only and shall be continuous one piece(no splices). The material shall be compounded of natural or synthetic polyisoprene or a

blend of both and shall contain reinforcing carbon black, zinc oxide, accelerators, antioxidants, vulcanizing agents and plasticizers. Physical characteristics shall meet the following requirements:

Physical Test	Test Value	Test Method Specification
Tensile Strength	2500 psi (min.)	ASTM D 412
Elongation at break	450% (min.)	ASTM D 412
300% Modulus	900 psi (min.)	ASTM D 412
Durometer Hardness, Shore Type A	60 to 70	ASTM D 2240
**Water Absorption	5% by weight(max.)	ASTM D 471
Compression Set	30% (max.)	ASTM D 395
Tensile Strength After Aging 48 Hours	80% (min.) of tensile strength	ASTM D 572

**The "Water Absorption" test shall be performed with distilled water. The washed specimen shall be blotted dry with filter paper or other absorbent material and suspended by means of small glass rods in the oven at a temperature of 70^{o} $\pm 2^{o}$C for 22 + 1/4 hour. The specimen shall be removed, allowed to cool to room temperature in air and weighted. The weight shall be recorded to the nearest 1 mg as W1 (W1 defined in ASTM D 471). The immersion temperature shall be 70^{o} $\pm 1^{o}$C and the duration of immersion shall be 166 hours.

2.4 RUBBER GASKETS

Rubber gaskets shall conform to FS HH-G-156e, Type II and shall be continuous one piece(no splices).

2.5 FLATHEAD BOLTS

Flathead bolts shall conform to ASTM F 593, Group 1.

2.6 NUTS

Nuts shall conform to ASTM F 594, Group 1.

2.7 LOCK WASHERS

Lock washers shall be made from corrosion resistant steel, ASTM A 313, Type 304.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The side seal assemblies shall be fabricated in accordance with details indicated on the drawings. The fabrication shall be in accordance with the requirements for tolerance, clearances and finishes specifically mentioned in these specifications and on the drawings. Tolerances, clearances and dimensions not specifically mentioned shall be according to standard practice, due consideration being given to the special nature or functions of the parts and to the corresponding accuracy required. The bars and angles shall be formed to the proper curvature by cold working without reducing the elastic limit of the material. The side seal assemblies shall be shop assembled in each fifth hole using erection bolts conforming to FF-S-85 and FF-N-836. Shipment will be made assembled. The stainless steel flathead bolts, washers, and nuts shall be shipped separately.

3.2 REPLACEMENT OF SIDE SEAL ON TAINTER GATES

3.2.1 General

The existing side seal assemblies shall be removed and disposed of offsite at the

Contractor's expense. This work shall include removing existing seals and installing new rubber seals, replacing existing gaskets with new neoprene gaskets; installation of new clamping plates, angles, and seal bars along the side of the tainter gates as shown on the drawings.

All items will be furnished by the Contractor. The metal components of the side seal assemblies shall be painted before installation in accordance with **(AM#1) SECTION 09965A**. The gate surfaces in the area of the removed seal assemblies shall be blast cleaned and painted prior to installing the new seal assemblies.

3.2.2 Preparation and Installation of Side Seal Assemblies

The Contractor shall include a plan for removing the existing and installing the new side seal assemblies.

3.3 WORKMANSHIP

Finished members shall be in accordance with the details shown on the drawings and as specified.

3.4 DIMENSIONAL TOLERANCES

Dimensions shall be measured by means of an approved calibrated steel tape of the same temperature as the steel. The following tolerances apply to the side seal angles and bars and shall be determined, after bending to the proper radius, with j-bulb leg of the curved angle laying on a flat surface which has an arc drawn to proper radius. The inside face of the skin plate leg of the angle and side seal bars shall be within 0-inch and +1/2-inch of the proper radius. The outside face of the j-bulb leg shall not deviate more than 1/4-inch from the flat surface. The legs of the curved angle shall be within $\pm$ 1/8-inch of forming a true 90^{o} angle when measured at the edge of the skin plate leg. The radius bends shall be smooth with no abrupt changes.

3.5 VERIFICATION OF TOLERANCES

The Contractor shall mark each side seal angle and bar with an identification number and record the tolerance measurements of each angle and bar along with radius and length in an acceptable format. The Contractor shall furnish the records of measurements to the Contracting Officer; three or more of the angles and bars will be randomly chosen by the Contracting Officer; and the Contractor shall check the measurements in the presence of the Contracting Officer to verify the dimensional tolerances prior to shipping.

-- End of Section --

SECTION 09965A

PAINTING: HYDRAULIC STRUCTURES
04/01
AMENDMENT NO. 0001

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z87.1	(1989; Errata; Z87.1a) Occupational and Educational Eye and Face Protection
ANSI Z358.1	(1990) Emergency Eyewash and Shower Equipment

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 12	(1988; R 1998) Raw Tung Oil
ASTM D 153	(1986; R 1996el) Specific Gravity of Pigments
ASTM D 235	(1999) Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)
ASTM D 281	(1995) Oil Absorption of Pigments by Spatula Rub-Out
ASTM D 304	(1995; R 1999) n-Butyl Alcohol (Butanol)
ASTM D 520	(1984; R 1995el) Zinc Dust Pigment
ASTM D 561	(1982; R 1999) Carbon Black Pigment for Paint
ASTM D 740	(1994; R 1997) Methyl Ethyl Ketone
ASTM D 841	(1997) Nitration Grade Toluene
ASTM D 962	(1981; R 1999) Aluminum Powder and Paste Pigments for Paints
ASTM D 1045	(1995) Sampling and Testing Plasticizers Used in Plastics
ASTM D 1152	(1989; R 1997) Methanol (Methyl Alcohol)
ASTM D 1153	(1994; R 1997) Methyl Isobutyl Ketone
ASTM D 1186	(1993) Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base
ASTM D 1200	(1994; R 1999) Viscosity by Ford Viscosity Cup
ASTM D 1210	(1996) Fineness of Dispersion of Pigment-Vehicle Systems by Hegman-Type Gage
ASTM D 1308	(1987; R 1998) Effect of Household Chemicals on Clear and Pigmented Organic Finishes
ASTM D 1400	(1994) Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base
ASTM D 1475	(1998) Density of Paint, Varnish, Lacquer, and Related Products
ASTM D 1640	(1995; R 1999) Drying, Curing, or Film Formation of Organic Coatings at Room Temperature

ASTM D 2369	(1998) Volatile Content of Coatings
ASTM D 2917	(1991; R 1998) Methyl Isoamyl Ketone
ASTM D 3721	(1983; R 1999) Synthetic Red Iron Oxide Pigment
ASTM D 4206	(1996) Sustained Burning of Liquid Mixtures Using the Small Scale Open-Cup Apparatus
ASTM D 4417	(1993; R 1999) Field Measurement of Surface Profile of Blast Cleaned Steel
ASTM E 1347	(1997) Color and Color-Difference Measurement by Tristimulus (Filter) Colorimetry

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1910.20	Access to Employee Exposure and Medical Records
29 CFR 1910.94	Ventilation
29 CFR 1910.134	Respiratory Protection
29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1910, Subpart I	Personal Protective Equipment
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.62	Lead
40 CFR 50.6	National Primary and Secondary Ambient Air Quality Standards for Particulate Matter
40 CFR 50.12	National Primary and Secondary Ambient Air Quality Standards for Lead
40 CFR 50, App B	Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere
40 CFR 58, App E	Probe Siting Criteria for Ambient Air Quality Monitoring
40 CFR 60, App A, Mtd 22	Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares
40 CFR 117	Determination of Reportable Quantities for Hazardous Substances
40 CFR 122	EPA Administered Permit Programs: The National Pollutant Discharge Elimination System
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 261, App III	Chemical Analysis Test Methods
40 CFR 261, App II, Mtd 1311	Toxicity Characteristic Leaching Procedure (TCLP)
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 262.22	Number of Copies
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
49 CFR 171, Subchapter C	Hazardous Materials Regulations

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-3130	Paint (For Application to Wet Surfaces)
CID A-A-3132	Coating System: Epoxy Primer/Urethane Topcoat, For Minimally Prepared Atmospheric Steel
CID A-A-50542	(Rev A) Coating System: Reflective, Slip-Resistant, Chemical-Resistant Urethane for Maintenance Facility Floors
FED-STD-595	(Rev B, Notice 1) Colors Used in Government Procurement

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

MASTER PAINTERS INSTITUTE (MPI)

MPI 9	(Mar 2000) Exterior Alkyd Enamel
MPI 46	(Mar 2000) Interior Enamel Undercoat
MPI 47	(Mar 2000) Interior Alkyd, Semi-Gloss
MPI 48	(Mar 2000) Interior Alkyd, Gloss
MPI 49	(Mar 2000)Interior Alkyd, Flat
MPI 50	(Mar 2000) Interior Latex Primer Sealer
MPI 51	(Mar 2000) Interior Alkyd, Eggshell
MPI 52	(Mar 2000) Interior Latex, Gloss Level 3
MPI 53	(Mar 2000) Interior Latex, Flat
MPI 54	(Mar 2000) Interior Latex, Semi-Gloss
MPI 114	(Mar 2000) Interior Latex, High Gloss (Acrylic)

U.S. DEPARTMENT OF DEFENSE (DOD)

MIL-DTL-24441	(Rev C, Supplement 1) Paint, Epoxy-Polyamide, General Specification for

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(1999) National Electrical Code

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH Pub No. 98-119	(1998, 4th Ed., 2nd Supplement) NIOSH Manual of Analytical Methods

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC Guide 6	(1995) Containing Debris Generated During Paint Removal Operations
(AM#1) SSPC PA 2	**(1996) Measurement of Dry Coating Thickness with Magnetic Gages**
SSPC QP 1	(1998) Standard Procedure for Evaluating Qualifications of Painting Contractors
SSPC QP 2	(1995) Standard Procedure for Evaluating the Qualifications of Painting Contractors to Remove Hazardous Paint
SSPC Paint 16	(1991) Coal Tar Epoxy-Polyamide Black (or Dark Red) Paint
SSPC Paint 20	(1991) Zinc-Rich Primers (Type I - "Inorganic" and Type

	II - "Organic")
SSPC Paint 25	(1991) Red Iron Oxide, Zinc Oxide, Raw Linseed Oil and Alkyd Primer (Without Lead and Chromate Pigments)
SSPC Paint 27	(1991) Basic Zinc Chromate-Vinyl Butyral Wash Primer
SSPC Paint 33	(1995) Coal Tar Mastic, Cold-Applied
SSPC PS 26.00	(2000) Aluminum-Pigmented Coating System for Steel Surfaces, Performance-Based
SSPC SP 1	(1982) Solvent Cleaning
SSPC SP 3	(1995) Power Tool Cleaning
SSPC SP 5	(1994) White Metal Blast Cleaning
SSPC SP 6	(1994) Commercial Blast Cleaning
SSPC SP 7	(1994) Brush-Off Blast Cleaning
(AM#1) SSPC SP 10/NACE 2	**(2000) Near-White Metal Blast Cleaning**
SSPC SP 12	(2002) Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating

1.2 PAYMENT

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Accident Prevention Plan; G,

The Contractor shall submit an Accident Prevention Plan in accordance with the requirements of Section 01 of EM 385-1-1. The plan shall include, but is not limited to, each of the topic areas listed in Appendix A therein and the requirements of paragraph SAFETY AND HEALTH PROVISIONS; each topic shall be developed in a concise manner to include management and operational aspects.

Medical Surveillance Plan; G,

The Contractor shall submit a Medical Surveillance Plan as required in paragraph MEDICAL STATUS and provide a statement from the examining physician indicating the name of each employee evaluated and any limitations which will preclude the employee from performing the work required. The statement shall include the date of the medical evaluation, the physician's name, signature, and telephone number.

Worker Protection Plan; G,

The Contractor shall submit a Worker Protection Plan in accordance with the requirements of 29 CFR 1926.62. The plan shall address all necessary aspects of worker protection and shall include activities emitting lead, means to achieve compliance, alternative technologies considered, air monitoring program, implementation schedule, work practice program, administrative controls, multicontractor site arrangements, and jobsite inspections.

Environmental Compliance Plan; G,

The Contractor shall submit an Environmental Compliance Plan. The plan shall incorporate the submittals for Water Quality Plan, Soil Quality Plan, Ambient Air Monitoring Plan, and Visible Emissions Monitoring Plan. The submitted plan shall also address all aspects of establishing and demarcating regulated areas,

ventilation/containment system performance verification, and reporting of accidental releases.

Waste Classification, Handling, and Disposal Plan; G,

The contractor shall submit a Waste Classification, Handling, and Disposal Plan in accordance with the requirements of 40 CFR 261 and 40 CFR 262 and paragraph Waste Classification, Handling, and Disposal.

Containment Plan; G,

The Contractor shall submit a plan for containing debris generated during paint removal operations in accordance with the requirements of paragraph Containment. The plan shall include drawings, load-bearing capacity calculations, and wind load calculations. When the design is such that the spent abrasive is allowed to accumulate in quantities greater than 1,000 pounds, and/or impart a significant wind load on the structure, the contractor shall have the drawings approved by a registered structural engineer. The drawings and calculations shall be stamped with the engineer's seal. The contractor shall also identify the type and placement of water booms, methods for anchoring the booms, and the procedures for removing debris.

Visible Emissions Monitoring Plan; G,

The Contractor shall submit a Visible Emissions Monitoring Plan in accordance with the paragraph Visible Emissions Monitoring. The plan shall include the provisions for halting work and correcting the containment in the event unacceptable emissions are observed. General statements shall not be used; specific methods, procedures, and details are required.

Water Quality Plan; G,

For all job sites where lead-containing or other hazardous paint will be removed, the Contractor shall submit a Water Quality Plan. The plan shall include provisions for halting work if spills or emissions are observed entering into bodies of water or found in areas where storm water runoff could carry the debris into bodies of water or storm sewers. The plan shall also address cleanup and reporting procedures.

(AM#1) **Paint Data; G,**

Submit manufacturer’s MSDS, product data sheets, and mixing and application instructions to include recommended coating thicknesses for all proposed paints. Data shall list viscosity, weight per gallon, total solids, drying times, and percent pigment.”

SD-04 Samples

Specification and Proprietary Paints; G,

(AM#1) **Submit proprietary paint and thinner samples in accordance with paragraph 1.5**

SD-06 Test Reports

Airborne Sampling Report; G,

The Contractor shall submit reports of airborne sampling tests as required by paragraph Airborne Sampling.

Inspection and Operation Records; G,

The Contractor shall submit records of inspections and operations performed in accordance with paragraph INSPECTION. Submittals shall be made on a daily basis.

(AM#1) **Paint Test Reports; G,**

Submit certified test report demonstrating that proposed System No. 1 paint complies with SSPC-PS 26.00. Submit certified test reports for each proposed paint batch. Report viscosity, weight per gallon, total solids, drying times, and percent pigment.”

SD-07 Certificates

Qualifications and Experience; G,

The Contractor shall submit certification pursuant to paragraph QUALIFICATIONS for all job sites. Submittal of the qualifications and experience of any additional qualified and competent persons employed to provide on-site environmental, safety, and health shall also be provided. Acceptance of this submission must be obtained prior to the submission of other required environmental, safety, and health submittal items.

Qualified Painting Contractor; G,

(AM#1) This requirement deleted

Qualified Hazardous Paint Removal Contractor; G,

(AM#1) This requirement deleted

Qualified Coating Thickness Gages; G,

Documentation of manufacturer's certification shall be submitted for all coating thickness gages.

1.4 QUALIFICATIONS

Qualifications and experience shall comply with the following.

1.4.1 Certified Professional

(AM#1) The Contractor, as a corporate entity, shall have completed a minimum of 5 abatement and painting jobs of the same size, or larger, as this job. The Contractor's painters shall have completed a minimum of 5 jobs involving painting steel and hydraulic structures using primer and paints similar to those described in this Section. The Contractor's CQC Systems Manager shall have a minimum of 3 years experience working on projects involving painting steel and hydraulic structures.

The Contractor shall utilize a qualified and competent person as defined in Section 01 of EM 385-1-1 to develop the required safety and health submittal and to provide on-site safety and health services during the contract period. The person shall be a Certified Industrial Hygienist (CIH), an Industrial Hygienist (IH), or a Certified Safety Professional (CSP) with a minimum of 3 years of demonstrated experience in similar related work.

The Contractor shall certify that the Certified Industrial Hygienist (CIH) holds current and valid certification from the American Board of Industrial Hygiene (ABIH), that the IH is considered board eligible by written confirmation from the ABIH, or that the CSP holds current and valid certification from the American Board of Certified Safety Professionals. The CIH, IH, or CSP may utilize other qualified and competent persons, as defined in EM 385-1-1, to conduct on-site safety and health activities as long as these persons have a minimum of 2 years of demonstrated experience in similar related work and are under the direct supervision of the CIH, IH, or CSP.

For lead containing jobsites, the competent and qualified person shall have successfully completed an EPA or state accredited lead-based paint abatement Supervisor course specific to the work to be performed and shall possess current and valid state and/or local government certification, as required.

1.4.2 Certified Laboratory

The Contractor shall provide documentation which includes the name, address, and telephone number of the laboratories to be providing services. In addition, the documentation shall indicate that each laboratory is an EPA National Lead Laboratory Accreditation Program (NLLAP) accredited laboratory and that each is rated proficient in the NIOSH/EPA Environmental Lead Proficiency Analytical Testing Program (ELPAT)and will document the date of current accreditation.

Certification shall include accreditation for heavy metal analysis, list of experience relevant to analysis of lead in air, and a Quality Assurance and Quality Control Program.

1.4.3 Qualified Painting Contractor

The Contractor shall be a certified SSPC-QP 1 Painting Contractor.

1.4.4 Qualified Hazardous Paint Removal Contractor

The Contractor shall be a certified SSPC-QP 2 Painting Contractor.

1.4.5 Coating Thickness Gage Qualification

Documentation of certification shall be submitted for all coating thickness gages. **(AM#1) The Contractor shall use a Type 2, 2-pole magnetic flux thickness gage (Elcometer 101) as described in SSPC-PA 2 to make all coating thickness measurements on ferrous metal substrates. Gages shall have an accuracy of +/- 10 percent or better.**

1.5 SAMPLING AND TESTING

The Contractor shall allow at least 30 days for sampling and testing. Sampling may be at the jobsite or source of supply. The Contractor shall notify the Contracting Officer when the paint and thinner are available for sampling. Sampling of each batch shall be witnessed by the Contracting Officer unless otherwise specified or directed.

A 1-quart sample of paint and thinner shall be submitted for each batch proposed for use. The sample shall be labeled to indicate formula or specification number and nomenclature, batch number, batch quantity, color, date made, and applicable project contract number. Testing will be performed by the Government. Costs for retesting rejected material will be deducted from payments to the Contractor.

1.6 SAFETY AND HEALTH PROVISIONS

Work shall be performed in accordance with the requirements of 29 CFR 1910, 29 CFR 1926, EM 385-1-1, and other references as listed herein. Matters of interpretation of the standards shall be submitted to the Contracting Officer for resolution before starting work. Where the regulations conflict, the most stringent requirements shall apply. Paragraph SAFETY AND HEALTH PROVISIONS supplements the requirements of EM 385-1-1, paragraph (1). In any conflict between Section 01 of EM 385-1-1 and this paragraph, the provisions herein shall govern.

1.6.1 Abrasive Blasting

The Contractor shall comply with the requirements in Section 06.H of EM 385-1-1.

1.6.1.1 Hoses And Nozzles

In addition to the requirements in Section 20 of EM 385-1-1, hoses and hose connections of a type to prevent shock from static electricity shall be used. Hose lengths shall be joined together by approved couplings of a material and type designed to prevent erosion and weakening of the couplings. The couplings and nozzle attachments shall fit on the outside of the hose and shall be designed to prevent accidental disengagement.

1.6.1.2 Workers Other Than Blasters

Workers other than blasting operators working in proximity to abrasive blasting operations shall be protected by utilizing MSHA/NIOSH-approved half-face or full-face air purifying respirators equipped with high-efficiency particulate air (HEPA) filters, eye protection meeting or exceeding ANSI Z87.1 and hearing protectors (ear plugs and/or ear muffs) providing a noise reduction rating of at least 20 dBA or as needed to provide adequate protection.

1.6.2 Cleaning with Compressed Air

Cleaning with compressed air shall be in accordance with Section 20.B.5 of EM 385-1-1 and personnel shall be protected as specified in 29 CFR 1910.134.

1.6.3 Cleaning with Solvents

1.6.3.1 Ventilation

Ventilation shall be provided where required by 29 CFR 1910.146 or where the concentration of solvent vapors exceeds 10 percent of the Lower Explosive Limit (LEL). Ventilation shall be in accordance with 29 CFR 1910.94, paragraph (c)(5).

1.6.3.2 Personal Protective Equipment

Personal protective equipment shall be provided where required by 29 CFR 1910.146 and in accordance with 29 CFR 1910, Subpart I.

1.6.4 Mixing Epoxy and Polyurethane Resin Formulations

1.6.4.1 Exhaust Ventilation

Local exhaust ventilation shall be provided in the area where the curing agent and resin are mixed. This ventilation system shall be capable of providing at least 100 linear fpm of capture velocity measured at the point where the curing agent and resin contact during mixing.

1.6.4.2 Personal Protective Equipment

Exposure of skin and eyes to epoxy resin components shall be avoided by wearing appropriate chemically resistant gloves, apron, safety goggles, and face shields meeting or exceeding the requirements of ANSI Z87.1.

1.6.4.3 Medical Precautions

Individuals who have a history of sensitivity to epoxy or polyurethane resin systems shall be medically evaluated before any exposure can occur. Individuals who are medically evaluated as exhibiting a sensitivity to epoxy resins shall not conduct work tasks or otherwise be exposed to such chemicals. Individuals who develop a sensitivity shall be immediately removed from further exposure and medically evaluated.

1.6.4.4 Emergency Equipment

A combination unit, comprised of an eyewash and deluge shower, within close proximity to the epoxy or polyurethane resin mixing operation shall be provided in accordance with ANSI Z358.1, paragraph (9).

1.6.5 Paint Application

1.6.5.1 Explosion Proof Equipment

Electrical wiring, lights, and other equipment located in the paint spraying area shall be of the explosion proof type designed for operation in Class I, Division 1, Group D, hazardous locations as required by the NFPA 70. Electrical wiring, motors, and other equipment, outside of but within 20 feet of any spraying area, shall not spark and shall conform to the provisions for Class I, Division 2, Group D, hazardous locations. Electric motors used to drive exhaust fans shall not be placed inside spraying areas or ducts. Fan blades and portable air ducts shall be constructed of nonferrous materials. Motors and associated control equipment shall be properly maintained and grounded. The metallic parts of air-moving devices, spray guns, connecting tubing, and duct work shall be electrically bonded and the bonded assembly shall be grounded.

1.6.5.2 Further Precautions

a. Workers shall wear nonsparking safety shoes.

b. Solvent drums taken into the spraying area shall be placed on nonferrous surfaces and shall be grounded. Metallic bonding shall be maintained between containers and drums when materials are being transferred.

c. Insulation on all power and lighting cables shall be inspected to ensure that the insulation is in excellent working condition and is free of all cracks and worn spots. Cables shall be further inspected to ensure that no connections are within 50 feet of the operation, that lines are not overloaded, and that they are suspended with sufficient slack to prevent undue stress or chafing.

1.6.5.3 Ignition Sources

Ignition sources, to include lighted cigarettes, cigars, pipes, matches, or cigarette lighters shall be prohibited in area of solvent cleaning, paint storage, paint mixing, or paint application.

1.6.6 Health Protection

1.6.6.1 Air Sampling

The Contractor shall perform air sampling and testing as needed to assure that workers are not exposed to contaminants above the permissible exposure limit. In addition, the Contractor shall provide the Contracting Officer with a copy of the test results from the laboratory within five working days of the sampling date and shall provide results from direct-reading instrumentation on the same day the samples are collected.

1.6.6.2 Respirators

During all spray painting operations, spray painters shall use approved SCBA or SAR (air line) respirators, unless valid air sampling has demonstrated contaminant levels to be consistently within concentrations that are compatible with air-purifying respirator Assigned Protection Factor (APF). Persons with facial hair that interferes with the sealing surface of the facepiece to faceseal or interferes with respirator valve function shall not be allowed to perform work requiring respiratory protection.

Air-purifying chemical cartridge/canister half- or full-facepiece respirators that have a particulate prefilter and are suitable for the specific type(s) of gas/vapor and particulate contaminant(s) may be used for nonconfined space painting, mixing, and cleaning (using solvents). These respirators may be used provided the measured or anticipated concentration of the contaminant(s) in the breathing zone of the exposed worker does not exceed the APF for the respirator and the gas/vapor has good warning properties or the respirator assembly is equipped with a NIOSH-approved end of service life indicator for the gas(es)/vapor anticipated or encountered.

Where paint contains toxic elements such as lead, cadmium, chromium, or other toxic particulates that may become airborne during painting in nonconfined spaces, air-purifying half- and full-facepiece respirators or powered air-purifying respirators equipped with appropriate gas vapor cartridges, in combination with a high-efficiency filter, or an appropriate canister incorporating a high-efficiency filter, shall be used.

1.6.6.3 Protective Clothing and Equipment

All workers shall wear safety shoes or boots, appropriate gloves to protect against the chemical to be encountered, and breathable, protective, full-body covering during spray-painting applications. Where necessary for emergencies, protective equipment such as life lines, body harnesses, or other means of personnel removal shall be used during confined-space work.

1.7 MEDICAL STATUS

Prior to the start of work and annually thereafter, all Contractor employees working with or around paint systems, thinners, blast media, those required to wear respiratory protective equipment, and those who will be exposed to high noise levels shall be medically evaluated for the particular type of exposure they may encounter. Medical records shall be maintained as required by 29 CFR 1910.20. The evaluation shall include:

a. Audiometric testing and evaluation of employees who will work in a noise environment with a time weighted average greater than or equal to 90 dBA.

b. Vision screening (employees who use full-facepiece respirators shall not wear contact lenses).

c. Medical evaluation shall include, but shall not be limited to, the following:

(1) Medical history including, but not limited to, alcohol use, with emphasis on liver, kidney, and pulmonary systems, and sensitivity to chemicals to be used on the job.

(2) General physical examination with emphasis on liver, kidney, and pulmonary system.

(3) Determination of the employee's physical and psychological ability to wear respiratory protective equipment and to perform job-related tasks.

(4) Determination of baseline values of biological indices for later comparison to changes associated with exposure to paint systems and thinners or blast media, which include: liver function tests to include SGOT, SGPT, GGPT, alkaline phosphates, bilirubin, complete urinalysis, EKG (employees over age 40), blood urea nitrogen (bun), serum creatinine, pulmonary function test, FVC, and FEV, chest x-ray (if medically indicated), blood lead and ZPP (for individuals where it is known there will be an exposure to materials containing lead), other criteria that may be deemed necessary by the Contractor's physician, and Physician's statements for individual employees that medical status would permit specific task performance.

(5) For lead-based paint removal, the medical requirements of 29 CFR 1926.62 shall also be included.

1.8 CHANGE IN MEDICAL STATUS

Any employee whose medical status has changed negatively due to work related chemical

and/or physical agent exposure while working with or around paint systems and thinners, blast media, or other chemicals shall be evaluated by a physician, and the Contractor shall obtain a physicians statement as described in paragraph MEDICAL STATUS prior to allowing the employee to return to those work tasks. The Contractor shall notify the Contracting Officer in writing of any negative changes in employee medical status and the results of the physicians reevaluation statement.

1.9 ENVIRONMENTAL PROTECTION

In addition to the requirements of section 01354 the Contractor shall comply with the following environmental protection criteria.

1.9.1 Waste Classification, Handling, and Disposal

The Contractor shall be responsible for assuring the proper disposal of all hazardous and nonhazardous waste generated during the project. Waste generated from abrasive blasting lead-containing paints with recyclable steel or iron abrasives shall be disposed of as a hazardous waste or shall be stabilized with proprietary pre-blast additives regardless of the results of 40 CFR 261, App II, Mtd 1311. Where stabilization is preferred, the contractor shall employ a proprietary blast additive, that has been blended with the blast media prior to use.

Hazardous waste shall be placed in properly labeled closed containers and shall be shielded adequately to prevent dispersion of the waste by wind or water. Any evidence of improper storage shall be cause for immediate shutdown of the project until corrective action is taken. Nonhazardous waste shall be stored in closed containers separate from hazardous waste storage areas.

All hazardous waste shall be transported by a licensed transporter in accordance with 40 CFR 263 and 49 CFR 171, Subchapter C.
All nonhazardous waste shall be transported in accordance with local regulations regarding waste transportation. In addition to the number of manifest copies required by 40 CFR 262.22, one copy of each manifest will be supplied to the Contracting Officer prior to transportation.

1.9.2 Containment

The Contractor shall contain debris generated during paint removal operations in accordance with the requirements of SSPC Guide 6, Class 2A. Where required the containment air pressure shall be verified visually. Where required the minimum air movement velocity shall be 100 fpm for cross-draft ventilation or 60 fpm for downdraft ventilation.

1.9.3 Visible Emissions Monitoring

The time of emissions shall be measured in accordance with 40 CFR 60, App A, Mtd 22. Visible emissions shall be monitored for not less than 15 minutes of every hour. Visible emissions for each hour shall be calculated by extrapolation. In no case shall visible emissions extend greater than 150 feet in any direction horizontal from the containment. In no case shall visible emissions be observed in the area of any sensitive receptor.

If such emissions occur the job shall be shut down immediately and corrective action taken. The foreman shall be notified whenever visible emissions exceed 40 seconds in a 1 hour period. The foreman shall be notified and the job shall be shut down and corrective action taken whenever visible emissions exceed 75 seconds in a 2 hour period.

Total observed visible emissions from the containment shall not exceed 1 percent of the work day. Shutdown and corrective action shall be taken by the Contractor to prevent such an occurrence. The Contractor shall document each time that the work is halted due to a violation of the visible emissions criteria. Documentation shall include the cause for shutdown and the corrective action taken to resolve the problem.

1.9.4 Water Quality

The Contractor shall conduct operations in such a manner that lead-containing and other hazardous paint debris do not contaminate the water and so that NPDES permits per EPA regulation 40 CFR 122 are not required for the project. In the event that there are any releases of lead paint debris into the waterways, with reportable quantities of hazardous substances designated pursuant to Section 311 of the Clean Water Act, they shall be reported to the EPA in accordance with 40 CFR 117 and 40 CFR 355.

Releases or spills that carry into waterways or storm sewers shall be thoroughly

documented. The documentation shall include the time and location of the release, amount of material released, actions taken to clean up the debris, amount of debris recovered, and corrective action taken to avoid a reoccurrence. Releases shall also be reported to the Coast Guard and other state and local authorities as appropriate. If the release is equivalent to 10 pounds or more of lead-containing material in a 24-hour period, it is considered to be a reportable quantity under CERCLA. The Contractor shall comply with 40 CFR 302.

1.10 PAINT PACKAGING, DELIVERY, AND STORAGE

Paints shall be processed and packaged to ensure that within a period of one year from date of manufacture, they will not gel, liver, or thicken deleteriously, or form gas in the closed container. Paints, unless otherwise specified or permitted, shall be packaged in standard containers not larger than 5 gallons, with removable friction or lug-type covers.

Each container of paint or separately packaged component thereof shall be labeled to indicate the purchaser's order number, date of manufacture, manufacturer's batch number, quantity, color, component identification and designated name, and formula or specification number of the paint together with special labeling instructions, when specified. Paint shall be delivered to the job in unbroken containers. Paints that can be harmed by exposure to cold weather shall be stored in ventilated, heated shelters. All paints shall be stored under cover from the elements and in locations free from sparks and flames.

PART 2 PRODUCTS

2.1 SPECIAL PAINT FORMULAS

Special paints shall have the composition as indicated in the formulas listed herein. Where so specified, certain components of a paint formulation shall be packaged in separate containers for mixing on the job. If not specified or otherwise prescribed, the color shall be that naturally obtained from the required pigmentation.

2.2 PAINT FORMULATIONS

There are no special paint formulas applicable to this project.

PART 3 EXECUTION

3.1 CLEANING AND PREPARATION OF SURFACES TO BE PAINTED

3.1.1 General Requirements

Surfaces to be painted shall be cleaned before applying paint or surface treatments. Deposits of grease or oil shall be removed in accordance with SSPC SP 1, prior to mechanical cleaning. Solvent cleaning shall be accomplished with mineral spirits or other low toxicity solvents having a flash point above 100 degrees F. Clean cloths and clean fluids shall be used to avoid leaving a thin film of greasy residue on the surfaces being cleaned. Items not to be prepared or coated shall be protected from damage by the surface preparation methods. Machinery shall be protected against entry of blast abrasive and dust into working parts.

Cleaning and painting shall be so programmed that dust or other contaminants from the cleaning process do not fall on wet, newly painted surfaces, and surfaces not intended to be painted shall be suitably protected from the effects of cleaning and painting operations.

Welding of, or in the vicinity of, previously painted surfaces shall be conducted in a manner to prevent weld spatter from striking the paint and to otherwise reduce coating damage to a minimum; paint damaged by welding operations shall be restored to original condition. Surfaces to be painted that will be inaccessible after construction, erection, or installation operations are completed shall be painted before they become inaccessible.

3.1.2 Ferrous Surfaces Subject to Atmospheric Exposures (Paint System No.1)

Ferrous surfaces continuously in exterior or interior atmospheric exposure and other surfaces as directed shall be cleaned by means of:

a. power tools or by dry blasting to the brush-off grade, and/or
b. water blasting to WJ-4 grade.

Power tool cleaning shall conform to the requirements of SSPC SP 3. Brush-off blast

cleaning shall conform to the requirements of SSPC SP 7. Water blasting shall conform to the requirements of SSPC SP 12. WJ-4 surface preparation is defined in SSPC SP 12 as Light Cleaning: "A WJ-4 surface shall be cleaned to a finish which, when viewed without magnification, is free of all visible oil, rease, dirt, dust, loose mill scale, loose rust, and loose coating. Any residual material shall be tightly adherent."

Welds and adjoining surfaces within a few inches (centimeters) thereof shall be cleaned of weld flux, spatter, and other harmful deposits by blasting, power impact tools, power wire brush, or such combination of these and other methods as may be necessary for complete removal of each type of deposit. The combination of cleaning methods need not include blasting when preparation of the overall surfaces is carried out by the power tool method. However, brush scrubbing and rinsing with clean water, after mechanical cleaning is completed, will be required unless the latter is carried out with thoroughness to remove all soluble alkaline deposits.

Wetting of the surfaces during water-washing operations shall be limited to the weld area required to be treated, and such areas shall be dry before painting. Welds and adjacent surfaces cleaned thoroughly by blasting alone will be considered adequately prepared provided that weld spatter not dislodged by the blast stream shall be removed with impact or grinding tools.

The contactor shall use water blasting on drive shaft surfaces at or near sealed areas where the shaft enters a drive mechanism. The contractor shall be responsible for seal integrity and shall replace, at his expense, any seals damaged by his operations.

All surfaces shall be **(AM#1) painted** as soon as practicable after cleaning but prior to contamination or deterioration of the prepared surfaces. To the greatest degree possible, steel surfaces shall be cleaned (and **(AM#1) painted**) prior to lengthy outdoor storage.

3.1.3 Ferrous Surfaces Subject to **(AM#1) Fresh Water Immersion** (Paint System No. XX)

(AM#1) Ferrous surfaces shall be solvent cleaned in accordance with SSPC-SP 1 to remove oil and grease or other contaminants, and then dry blast-cleaned to SSPC-SP 10, Near-White Blast Cleaning. The blast profile, unless otherwise recommended by the primer manufacturer, shall be 1.0 to 2.0 mils as measured by ASTM D 4417, Method C. Appropriate abrasive blast media shall be used to produce the desired surface profile and to give an angular anchor tooth pattern. If recycled blast media is used, an appropriate particle size distribution shall be maintained so that the specified profile is consistently obtained. Steel shot or other abrasives that do not produce an angular profile shall not be used.

Weld spatter not dislodged by blasting shall be removed with impact or grinding tools and the areas reblasted prior to painting. Surfaces shall be dry at the time of blasting.

Within 8 hours after **(AM#1) blast** cleaning and before the deposition of any detectable moisture, contaminants, or corrosion, all ferrous surfaces shall be cleaned of dust and abrasive particles by brush, vacuum cleaner, and/or blown down with clean, dry, compressed air, and given the primer coat.

Whenever possible the Contractor shall organize his work so that blast cleaning will not affect areas he has already primed. When primed areas are affected by nearby blast cleaning operations, the Contractor shall re-prime the affected areas in accordance with these specifications before applying the first finish coat.

(AM#1) 3.1.3.1 Sample Panels

The Contractor shall prepare two 1/8”x 12”x 12” mild steel sample panels demonstrating proposed surface cleanliness and profile. Panels shall be blast cleaned to SSPC-SP No. 10/NACE No. 2 and shall have a profile of 1 to 2 mils (unless recommended otherwise by primer manufacturer). After they have been blasted, they shall be coated with flat lacquer to prevent rusting. Panels shall be submitted for Government approval. After approval, they shall be used as the standards for judging the acceptability of the blasted surfaces on the jobsite.

(AM#1) 3.1.3.2 Additional Gage and Surface Cleanliness Standards.

The Contractor shall use a Testex Press-O-Film CX Surface Coating Profiler (Snap gage and tape) to test blasted surfaces for compliance with specified profile and a set of NACE surface cleanliness standards for judging blast-cleaned sample panels’ level of cleanliness. Selected NACE standards shall have been prepared with the same type of

blasting media that will be used on this project.

Contractor shall provide a surface profiler (gage and tape) and NACE standards for the Authorized Government Representative's use. After contract completion, the profiler, along with 2 new rolls of tape (coarse and X-coarse), and a set of NACE standards shall become the property of the Government."

3.2 PAINT APPLICATION

3.2.1 General

The finished coating shall be free from holidays, pinholes, bubbles, runs, drops, ridges, waves, laps, excessive or unsightly brush marks, and variations in color, texture, and gloss. Application of initial or subsequent coatings shall not commence until the Contracting Officer has verified that atmospheric conditions and the surfaces to be coated are satisfactory.

Each paint coat shall be applied in a manner that will produce an even, continuous film of uniform thickness. Edges, corners, crevices, seams, joints, welds, rivets, corrosion pits, and other surface irregularities shall receive special attention to ensure that they receive an adequate thickness of paint. Spray equipment shall be equipped with traps and separators and where appropriate, mechanical agitators, pressure gauges, pressure regulators, and screens or filters.

Air caps, nozzles, and needles shall be as recommended by the spray equipment manufacturer for the material being applied. Airless-type spray equipment may be used only on broad, flat, or otherwise simply configured surfaces, except that it may be employed for general painting if the spray gun is equipped with dual or adjustable tips of proper types and orifice sizes. Airless-type equipment shall not be used for the application of vinyl paints.

3.2.2 Mixing and Thinning

Paints shall be thoroughly mixed, strained where necessary, and kept at a uniform composition and consistency during application. Paste or dry-powder pigments specified to be added at the time of use shall, with the aid of powered stirrers, be incorporated into the vehicle or base paint in a manner that will produce a smooth, homogeneous mixture free of lumps and dry particles.

Where necessary to suit conditions of the surface temperature, weather, and method of application, the paint may be thinned immediately prior to use. Thinning shall generally be limited to the addition of not more than 1 pint per gallon of the proper thinner; this general limitation shall not apply when more specific thinning instructions are provided. Paint that has been stored at low temperature, shall be brought up to at least 70 degrees F before being mixed and thinned, and its temperature in the spray tank or other working container shall not fall below 60 degrees F during the application.

Paint that has deteriorated in any manner to a degree that it cannot be restored to essentially its original condition by customary field-mixing methods shall not be used and shall be removed from the project site. Paint and thinner that is more than 1 year old shall be resampled and resubmitted for testing to determine its suitability for application.

3.2.3 Atmospheric and Surface Conditions

Paint shall be applied only to surfaces that are above the dew point temperature and that are completely free of moisture as determined by sight and touch. Paint shall not be applied to surfaces upon which there is detectable frost or ice. Except as otherwise specified, the temperature of the surfaces to be painted and of air in contact therewith shall be not less than 45 degrees F during paint application nor shall paint be applied if the surfaces can be expected to drop to 32 degrees F or lower before the film has dried to a reasonably firm condition.

During periods of inclement weather, painting may be continued by enclosing the surfaces and applying artificial heat, provided the minimum temperatures and surface dryness requirements prescribed previously are maintained. Paint shall not be applied to surfaces heated by direct sunlight or other sources to temperatures that will cause detrimental blistering, pinholing, or porosity of the film.

3.2.4 Time Between Surface Preparation and Painting

Surfaces that have been cleaned and/or otherwise prepared for painting shall be primed as soon as practicable after such preparation has been completed but, in any event, prior to any deterioration of the prepared surface.

3.2.5 Method of Paint Application

Unless otherwise specified, paint shall be applied by brush or spray. Special attention shall be directed toward ensuring adequate coverage of edges, corners, crevices, pits, rivets, bolts, welds, and similar surface irregularities. Other methods of application to metal surfaces shall be subject to the specific approval of the Contracting Officer.

3.2.6 Coverage and Film Thickness

(AM#1) Dry film thickness of each coat of paint shall be no less than the minimum recommended by the manufacturer, plus 15 percent, for the indicated exposure. In any event, the combined coats of a specified paint system shall completely hide base surface and the finish coats shall completely hide undercoats of dissimilar color.

3.2.6.1 Measurement on Ferrous Metal

Where dry film thickness requirements are specified for coatings on ferrous surfaces, measurements shall be made with a gage qualified in accordance with paragraph Coating Thickness Gage Qualification. They shall be calibrated and used in accordance with ASTM D 1186. They shall be calibrated using plastic shims with metal practically identical in composition and surface preparation to that being coated, and of substantially the same thickness (except that for measurements on metal thicker than 1/4 inch, the instrument may be calibrated on metal with a minimum thickness of 1/4 inch). Frequency of measurements shall be as recommended for field measurements by ASTM D 1186 and reported as the mean for each spot determination. The instruments shall be calibrated or calibration verified prior to, during, and after each use.

3.2.6.2 Additional Gage

(AM#1) The Contractor shall use Elcometer 101 gages, Part Nos. A101A-01A (0-25 mils) and A101A-05A (0-10 mils), to make his thickness measurements, and DeFelsko precision plastic shims to calibrate them. Shims shall be replaced periodically to prevent inaccuracy due to wear. The Contractor shall provide shims and a pair of gages for the Authorized Government Representative's use. After contract completion, the gages and a new set of shims shall become the property of the Government.

3.2.7 Progress of Painting Work

Where field painting on any type of surface has commenced, the complete painting operation, including priming and finishing coats, on that portion of the work shall be completed as soon as practicable, without prolonged delays. Sufficient time shall elapse between successive coats to permit them to dry properly for recoating, and this period shall be modified as necessary to suit adverse weather conditions.

Paint shall be considered dry for recoating when it feels firm, does not deform or feel sticky under moderate pressure of the finger, and the application of another coat of paint does not cause film irregularities such as lifting or loss of adhesion of the undercoat. All coats of all painted surfaces shall be unscarred and completely integral at the time of application of succeeding coats.

At the time of application of each successive coat, undercoats shall be cleaned of dust, grease, overspray, or foreign matter by means of airblast, solvent cleaning, or other suitable means. Cement and mortar deposits on painted steel surfaces, not satisfactorily removed by ordinary cleaning methods, shall be brush-off blast cleaned and completely repainted as required. Undercoats of high gloss shall, if necessary for establishment of good adhesion, be scuff sanded, solvent wiped, or otherwise treated prior to application of a succeeding coat. Field coats on metal shall be applied after erection except as otherwise specified and except for surfaces to be painted that will become inaccessible after erection.

3.2.8 Contacting Surfaces

When riveted or ordinary bolted contact is to exist between surfaces of ferrous or other metal parts of substantially similar chemical composition, such surfaces will not be required to be painted, but any resulting crevices shall subsequently be filled or sealed with paint. Contacting metal surfaces formed by high-strength bolts in friction-type connections shall not be painted. Where a nonmetal surface is to be in riveted or bolted contact with a metal surface, the contacting surfaces of the metal shall be cleaned and given three coats of the specified primer. Unless otherwise

specified, corrosion-resisting metal surfaces, including cladding therewith, shall not be painted.

3.2.9 Drying Time Prior to Immersion

Minimum drying periods after final coat prior to immersion shall be at least 7 days. Minimum drying periods shall be increased twofold if the drying temperature is below 65 degrees F and/or if the immersion exposure involves considerable abrasion.

3.2.10 Protection of Painted Surfaces

Where shelter and/or heat are provided for painted surfaces during inclement weather, such protective measures shall be maintained until the paint film has dried and discontinuance of the measures is authorized. Items that have been painted shall not be handled, worked on, or otherwise disturbed until the paint coat is fully dry and hard.

3.2.11 System XX

3.2.11.1 Ambient Temperature

Paint shall not be applied when the receiving surface or the ambient air is:

a. **(AM#1) Below 45 degrees F, unless it can be reasonably anticipated that the average ambient temperature will be 45 degrees F or higher for the 5-day period subsequent to the application of any coat.**

b. above 95 degrees F

3.2.11.2 Safety

In addition to the safety provisions in paragraph SAFETY AND HEALTH PROVISIONS, other workmen as well as painters shall avoid inhaling atomized particles of paint and contact of the paint with the skin.

3.3 PAINT SYSTEMS APPLICATION

The required paint systems and the surfaces to which they shall be applied are shown in this paragraph, and/or in the drawings. Supplementary information follows.

3.3.1 Surface Preparation

The method of surface preparation and pretreatment shown in the tabulation of paint systems is for identification purposes only. Cleaning and pretreatment of surfaces prior to painting shall be accomplished in accordance with detailed requirements previously described.

3.3.2 System No. 1

This epoxy paint system shall have been tested and passed all the test requirements of SSPC PS 26.00. Application shall be by spray, brush or roller in accordance with the manufacturer's written instructions. **(AM#1) Minimum dry film thickness of the paint system shall be not less than, plus 10 percent of, that recommended by the manufacturer.** Application of the system in less than two coats shall not be accepted. **(AM#1) Contractor shall verify compatibility of proposed paint with existing paint that is to be overcoated. Surface preparation shall be altered as necessary to eliminate incompatible existing paint.**

The epoxy coating shall be mixed and thinned in accordance with the manufacturers written directions. Mixed coating material that has exceeded the manufacturers pot life shall not be applied. Materials that have been mixed for more than 8 hours or that have thickened appreciably shall not be applied. The manufacturer's recommendations for minimum and maximum dry time between coats shall be met.

3.3.3 System No. XX

Coating system shall be **(AM#1) Wasser MC-Zinc** primer and MC-Tar coating or approved equal and shall be applied in accordance with the manufacturer's instructions.

3.3.4 Protection of Nonpainted Items and Cleanup

Walls, equipment, fixtures and all other items in the vicinity of the surfaces being painted shall be maintained free from damage by paint or painting activities. Paint spillage and painting activity damage shall be promptly repaired.

3.4 INSPECTION

The Contractor shall inspect, document, and report all work phases and operations on a daily basis. As a minimum the daily report shall contain the following:

a. Inspections performed, including the area of the structure involved and the results of the inspection.

b. Surface preparation operations performed, including the area of the structure involved, the mode of preparation, the kinds of solvent, abrasive, or power tools employed, and whether contract requirements were met.

c. Thinning operations performed, including thinners used, batch numbers, and thinner/paint volume ratios.

d. **(AM#1) Application operations performed, including the area of the structure involved, mode of application employed, ambient temperature, substrate temperature, dew point, relative humidity, type of paint with batch numbers, elapsed time between surface preparation and application, elapsed time for recoat, condition of underlying coat, number of coats applied, blast-cleaning surface profile, and measured dry film thickness. The Contractor shall prepare gridded sketches of tainter gates and bulkheads to identify locations of coating thickness measurements on all surfaces. Each grid shall represent 100 square feet of surface area and shall be assigned an identification number. Thickness measurements for each coating applied to tainter gates and bulkheads shall be reported in tabular format.**

3.5 FINAL CLEANING AND CLEARANCE TESTING FOR LEAD CONTAMINANTS

All facilities and surfaces within or directly adjacent to the regulated area shall be cleaned and decontaminated using phosphate detergents and HEPA vacuums as necessary to provide surfaces that are clean of residual lead dust. Clearance testing shall be performed. A sufficient number of wipe tests shall be performed to document the level of residual lead contamination. No surface shall have greater than 8,000 micrograms of lead per square foot.

3.6 PAINTING SCHEDULES

SYSTEM NO. 1

Items or surfaces to be coated: All exposed metal surfaces on the spillway except for tainter gates, trunnion girders and supporting structure, bulkheads and lifting beams, chain link fence and machinery cover roof. Items to be painted include, but are not limited to, the overhead crane and supporting structure,gate hoist machinery, machinery decks, catwalks, personnel basket, torque tubes, drive shafts, gratings, cover plates, handrails, guardrails, ladders, stairs, electrical boxes, dogging hooks and linkages, and gate operators.

(AM#1) The metal surfaces to be painted with System No. 1 are known to be coated with lead-based paint.

SURFACE PREPARATION	PAINT SYSTEM
Power tool, brush-off blast cleaning or water blasting.	SSPC PS 26.00 Type II (Aluminum)

SYSTEM NO. XX

Items or surfaces to be coated: All exposed metal surfaces on the 6 tainter gates including upstream and downstream surfaces, trunnion girders and supporting structure, all exposed metal surfaces on the 10 bulkheads and the new lifting beam.

SURFACE PREPARATION	1st COAT	2nd COAT	3rd COAT
(AM#1) Near-White metal blast cleaning	Zinc primer urethane (black)	Coal tar-urethane (red)	Coal tar-

-- End of Section --

Photo Sk-1: Pitting in the skin plate that is typical of pitting on the edges of the tainter gates.

Photo Sk-2: Typical condition of tainter gate skin plate behind the hoisting cables.

Photo Sk-3: Typical condition of tainter gate skin plate behind the hoisting cables.

Photo Sk-4: Typical condition of tainter gate skin plate in the splash zone.

Photo Cr-1: Photo of overhead crane.

Photo Sk-5: Overall photo of skin plate.

Photo Sk-6: Photo of skin plate adjacent to cables.